Remarks

ON THE

TREATMENT OF GASTRIC ULCER BY IMMEDIATE FEEDING.*

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IN December, 1906, in a discussion at the Medico-Chirurgical Society,[1] and in the following year in the *Clinical Journal*,[2] I mentioned the favourable results which had followed the use of the Lenhartz method of treatment of ulcer of the stomach in a few cases under my care. Since then I have had the opportunity of observing more cases treated in this way, and propose this evening to lay the results before you. The cases here reported were unselected, of the ordinary types met with in hospital practice. For the purpose of comparison, a similar number of other cases, taken consecutively from the records of St. George's Hospital during the same period, are tabulated with them.

The essential features of Professor Lenhartz's treatment are:

(1) Complete rest in bed for four weeks; (2) feeding the patient from the beginning of the attack with small quantities of beaten-up egg and milk, the quantities being increased daily; (3) the application of an icebag to the epigastrium; (4) adding to the dietary boiled rice, mince, and other semisolid and solid foods after the first week; (5) the administration of bismuth and iron in suitable form. Of these, the complete rest in bed, the bismuth and iron, and the icebag are commonly advised by physicians; but the plan of allowing food to be put into the ulcerated stomach at the beginning of treatment is contrary to the usual practice.

The method is founded on the view that acid gastric juice delays the healing of an ulcer, even when no food at all is given by the mouth; and that the reparative process cannot proceed satisfactorily in an ill-nourished and anaemic person, such as the subject of this malady commonly is. Experimental researches are quoted in support of each of these propositions.

That the acid juice will irritate an open sore every one will agree. Mathes produced artificial lesions of the gastric mucous membrane in animals, and found that they healed rapidly except when exposed to the action of dilute hydrochloric acid. This result appears to show that healing was not delayed by the presence of a normal amount of acid but of an excess. In the subjects of gastric ulcer, however, it is the general opinion that the normal gastric juice, if secreted, will act prejudicially, and the treatment by nutrient enemas is intended to prevent the secretion of juice which appears when food is introduced into the stomach. But it must be remembered that gastric juice also flows on the thought of food in a hungry person, and it has been stated by Bourget, Winternitz, and Umber that when a nutrient enema is given a flow of gastric juice is excited, and pain is felt in the stomach. Ewald and Michael, however, were not able to confirm the occurrence of secretion. Pain is certainly felt by many patients, and is often referred to the stomach, though in some cases it may arise in the colon. Obviously, if either the thought of food or the irritation of an ulcer may be followed by a flow of juice, harm may be done, for the juice will flow over the raw surface, which is unprotected by the normal mucous membrane.

The second point—namely, that the reparative process cannot proceed so well in an ill-nourished and anaemic person—is self-evident; it is also clear that even if the patient is, as the subjects of gastric ulcer sometimes are, fairly nourished at the beginning of the attack, the treatment by saline injections and nutrient enemas will be followed by wasting, for all who have studied the subject of rectal feeding by means of accurate metabolism experiments are agreed that, although some energy may be furnished in this way, nevertheless sufficient food to maintain the needs of the body cannot be supplied. Still less is the anaemia from which these patients suffer likely to improve on such a dietary. Quincke and Daettwyler, found that ulcers which healed quickly in normal dogs did not in those rendered anaemic. If food can be introduced into the stomach from the beginning, the recovery from the anaemic condition is likely to be more rapid than if the patient is subjected to a further period of subnutrition.

The objection to immediate feeding by the mouth is that work is thereby thrown upon a diseased organ which, it might be thought on rational principles, should be given a complete rest. Further, it is urged that the presence of food in the stomach necessitates the contraction of that viscus, to pass it on into the duodenum, and that such movement of the stomach walls is likely to dislodge a clot in an opened vessel and cause a recurrence of haemorrhage. To this Lenhartz replies that the danger of a clot becoming dislodged in this way is no greater than the danger of its being dissolved by gastric juice in an empty stomach, whilst if small quantities of protein food are supplied the hydrochloric acid of any gastric juice poured out is neutralized, because it combines with the protein. To this end teaspoonful doses of beaten-up egg and milk are prescribed. Egg albumen rapidly forms a combination with hydrochloric acid. Milk is a food that calls forth less secretive activity in the stomach than any other food. Fat, which is present in the yolk of an egg, is known to inhibit the secretion of juice. So that the particular combination of foods used is that calculated to excite the least possible secretion and to combine most efficiently with the acid of whatever juice is secreted. As it is given in very small quantities at a time, distension of the stomach is obviated and the necessary movements reduced to a minimum. It is probable that distension of the stomach is far more harmful to an ulcer than contraction. The food is swallowed and requires no mastication, and this again keeps the gastric secretion low, for the act of chewing is accompanied by a production of juice.

An icebag placed upon the epigastrium is intended to keep the stomach in a quiescent state. The application of cold has been observed by Rossbach[3] to diminish the movements of the stomach. By promoting atonic constriction of the walls, gaseous distension, which might be a cause of haemorrhage, would be prevented. An icebag also relieves pain when present.

The routine of the Lenhartz method is as follows:[4] The patient is kept absolutely in bed for four weeks, for the first two of which she is not allowed to move from the supine position for any reason whatever. All mental excitement must be avoided. An icebag is kept upon the stomach almost continually for the first two weeks. The dietary consists of eggs beaten up with sugar, or in some cases with wine, and iced; and of milk. These two foods are taken in small quantities at frequent intervals from a teaspoon, the quantity prescribed being spread over the day, and not given at definite meal times. The first day 7 to 10 oz. of milk are given and one egg. The quantity is increased daily by 3½ oz. of milk and one egg until 1¾ pints of milk and six eggs, or in some cases eight eggs, are reached. From about the third to the eighth day raw or almost raw mince is added, starting with an ounce in divided doses, either beaten up with the egg or alone; the next day, if the mince is well borne, 2 oz. are given; in these cases minced beef was used.

From the seventh to the eighth day boiled rice is added, followed by softened bread and later by a small quantity of bread and butter. One or more eggs may now be lightly boiled. The diet is then gradually increased by the addition of mince or pounded fish, with a corresponding reduction of eggs, until by the end of the fourth week the patient is on an ordinary mixed diet containing the common foodstuffs with the exception of indigestible solids such as peas or other seeds. The patient is instructed to masticate very slowly. On the twenty-eighth day the patient is allowed to get up, and discharged from the sixth to the tenth week.

For the first ten days bismuth subnitrate is given in doses of 30 grains in water without mucilage twice or three times a day. In these cases, however, the carbonate or the oxychloride was used. From the sixth to the

*Read before the Royal Society of Medicine.

tenth day sulphate of iron is prescribed in the following form:

Sulphate of iron	150 grains
Calcined magnesia...	20 grains
Glycerine	1 drachm

Mix and divide into 60 pills.

Two of these are given two or three times a day. Lenhartz increases the dose gradually, giving three for three days, four for four days, up to ten for ten days, and then down again. In some cases arsenic is added. The bowels are not disturbed at all during the first week unless they are naturally opened. An enema is then given and repeated every fourth day during treatment. The mouth should be washed out and attended to regularly.

In my own cases I have usually begun with 3½ oz. of milk and one egg on the first day, and have seldom given the iron pill more than three times a day.

It is claimed for the Lenhartz method that it is suitable for all forms of gastric ulcer except, of course, those associated with mechanical deformities, such as stenosis of the pylorus, and those in which some serious complication, such as perforation, peritonitis, or subphrenic abscess, is present. It is said that the sour regurgitation, the vomiting, and the pains and distress after food disappear in from a few hours to a few days. The method is reported as having been found successful after recurrent haemorrhages have occurred on rectal feeding.

The diet introduces an amount of food which soon becomes adequate to the needs of the body. A table is given by Lenhartz in which the calories given per diem are shown to reach nearly 1,600 on the seventh day, and 2,500 on the tenth. The actual figures for the first fourteen days are: 280, 420, 637, 777, 956, 1,135, 1,588, 1,721, 2,138, 2,478, 2,941, 2,941, 3,007, 3,073 calories.

It is important that patients should be kept in hospital some weeks after they have reached full diet, for a case cannot be recorded as cured until not only are there no symptoms, but the percentage of haemoglobin and the weight are normal. Unfortunately it is difficult to keep the average hospital patient in after all symptoms have subsided.

Before attempting a new method it is necessary to ask whether the old is unsatisfactory. There is no doubt that the recognized method of treatment is in many cases extremely successful. It has, however, some serious disadvantages. In the first place, severe cases are subjected to a considerable period of starvation or semistarvation, and the less successful the treatment is the longer is the starvation period extended. The routine when fully carried out is extremely tedious. Dr. Hawkins[5] describes for instance, a course in which four weeks after admission the patient is having only milk, plasmon, arrowroot, and thin bread and butter. Fish and chicken are started six weeks after the mouth-feeding has begun. There has been, however, distinct reaction among physicians against this extended period. During the stage of enemas the mouth may become very foul in spite of careful washing out, and parotitis has occurred (Rolleston and Tebbs[7]). Vomiting may be very troublesome in some cases, and it is interesting to note that Drs. Rolleston and Jex-Blake[15] found in one case that on cautiously dieting with solid food and withdrawing the enemas it ceased. The prolonged period of subnutrition is accompanied by considerable acidosis, as evidenced by the excretion of diacetic acid in the urine, as Dr. Rolleston has shown, but stronger than even these objections is the unpleasantness of rectal feeding. In hospital practice this is not such an important point, although the patients and the nurses will take a view very different to that of the physician, who has nothing to do with the actual carrying out of the treatment. In private practice, however, the case is different. Even if the Lenhartz method is not superior to the ordinary method, if it is equally good and not less safe it will prove a boon both to the doctor and the patient when treatment is being carried out at home, where rectal medication is nearly always objected to, and very often inefficiently administered.

The present paper is based upon the details of 33 cases treated by the Lenhartz method, and 34 treated by the ordinary methods. I am indebted to my senior colleagues, Drs. Rolleston, Ogle, and Latham, for permission to publish such cases as were not under my care, or were only under my care for a part of their stay in the hospital. The cases were taken *seriatim* and, with the exceptions mentioned below, not specially chosen. The 34 cares treated by other methods are taken consecutively from the hospital records. The exceptions that have been made in both series are those of patients in whom the diagnosis was, in my opinion, doubtful, on the one hand, because the symptoms were not severe enough to justify the diagnosis of ulcer, or, on the other, cases which were thought or proved to be due to carcinoma; and cases severely complicated by other diseases not directly connected with the gastric disease. A few cases have also been omitted in which the patients were treated by immediate feeding, but in a manner widely different to that advocated by Lenhartz. Some of these did well and some badly, but it would be difficult to decide in which series to put them. Five cases, however, are included in the second series in which there were no rectal injections, either saline or nutrient. On the whole, the two series may be taken as similar to one another in type and in severity.

Both series contain examples of the common accompaniments of gastric ulcer—namely, anaemia, carious teeth, and neurosis. The Lenhartz series includes 1 case with albuminuria and 1 with chronic alcoholism. The second series contains 1 patient with ulcer of the leg, 1 three months pregnant, and 1 with uterine displacement.

In considering the advisability of adopting the treatment by immediate feeding, the first question raised will be, Is it dangerous? Is there a greater risk of the recurrence of haemorrhage and perforation than by the usual method of nutrient enemas followed by a graduated milk diet? In the above cases in the first series twenty-five of the patients had *haematemesis* in the attack for which they were admitted, and one had had it in a previous attack. In the 25 cases there was one recurrence on the third day of treatment. The patient was not under my care, and the method was not being rigidly followed, inasmuch as no icebag was prescribed and the patient had moved from the recumbent position when the haemorrhage recurred. The feeding was discontinued, the patient being put upon nutrient enemas, and a good recovery was made. In the 34 cases treated by other methods, 29 suffered from haemorrhage in the attack for which they were admitted. There were four recurrences, two on the second and two on the third day. In one case there was bleeding on both the second and third day. As far, then, as these figures go the danger of haemorrhage is certainly not greater, and apparently less, upon the Lenhartz diet, for haemorrhage recurred in 4 per cent. of the cases on this diet and in 14 per cent. of the others. In 150 cases with recent haemorrhage treated by Lenhartz there was recurrence in 10 per cent., whilst in 120 such cases treated by Wirsing with nutrient enemas the bleeding recurred in 18 per cent.

It may be objected that some of these cases were not cases of ulcer but of gastrostaxis, described by Dr. Hale White. This criticism, however, will apply equally to cases in both tables. The researches of Drs. S. Martin, C. H. Miller, and others indicate that the pathology of gastrostaxis and of gastric ulcer is identical, for each appears to arise in a mass of lymphoid tissue. Lymphoid tissue is more abundant in the stomachs of those who are subjects of dyspepsia; the absorption of irritating material from the stomach may cause a breaking down of the follicle, and through the action of the gastric juice an ulcer may result. We know that in the small intestine also the lymphoid patches are the most vulnerable areas. Dr. Hale White has demonstrated that symptoms formerly thought to be definitely indicative of an ulcer may arise from a minute fissure or a group of bleeding spots. These bleeding spots, however, are found frequently in that region of the stomach most prone to ulceration, and it is difficult to say that a group of such small lesions is not an early stage of an ulcer.

We may next consider the question of *pain*. On the Lenhartz diet the usual result is for pain to vanish entirely within forty-eight hours of the commencement of the treatment, and the diet is so graduated that the risk of recurrence of pain when solid food begins to be taken is, in my experience, less than that of the ordinary method of treatment, in which it is a common thing to

find the patient do well until the attempt is made to take fish or mince.

In the 33 cases treated by the Lenhartz method, in 8 cases pain is mentioned in the notes after the seventh day; 3 of these were transient recurrences; 1 was an extremely neurotic patient who appears in both series, and on both methods of treatment complained of pain during most of her stay in hospital, and another was the subject of nephritis. In 3 other of the 33 cases pain was complained of after the first week.

In the 34 cases treated by other methods, in 11 pain is recorded after the first week; 2 of these were neurotic women, one being the above-mentioned case; in 2 others haemorrhage had recurred; 1 was a patient upon whom gastro-enterostomy had been performed; and there were 6 others about whom no special note need be made except that the pain persisted. In this respect, therefore, the advantage again seems to lie with the Lenhartz treatment.

In none of the cases on this diet was it found necessary to give opium in any form. In one neurotic subject the pain complained of disappeared after the application of a blister.

Weight.—Of the patients on the diet who were weighed on entering the hospital, 8 put on an average of 4.2 lb. each, whilst 6 lost an average of 3.5 lb. each. The figures are of little value, however, as they do not reckon the increase of weight which took place at the convalescent hospital. Of the patients who lost weight, one was a patient who had nephritis, in whom the diet could not be fully carried out, and who lost 6 lb., and another was a case who yielded to neither method of medical treatment nor to operation.

Parotitis is liable to occur in patients being fed by the rectum, even when the greatest care is taken to wash out the mouth with cleansing fluid. It is recorded in 2 of the 34 cases treated by the other methods, but in none of those upon the Lenhartz diet.

The figures are too small to judge of the *mortality*, but it will be seen that no case died upon the Lenhartz diet.* There was one death among the other cases.

The *length of stay in hospital* averages thirty-four days in both sets of cases. In this connexion it must be noted that many patients are sent from St. George's Hospital to the convalescent hospital at Wimbledon at a much earlier date than it would be possible to send them to their homes. This figure, therefore, cannot be compared with hospitals not having a convalescent branch of their own near at hand. Cases of gastric ulcer do uniformly well at the convalescent hospital, and almost invariably put on several pounds weight. Fourteen of each series were sent to Wimbledon at the end of their stay in the hospital.

Especially instructive is the comparison of the *number of days* in the two sets of cases *before the patient reached a diet containing meat or fish.* Among the patients treated on the Lenhartz system, 14 were upon the ordinary diet of the hospital, containing meat, fish, and potatoes, before leaving, the average time taken to reach this standard being thirty days; 11 cases left the hospital on a fish diet, which includes potatoes, having reached this diet in an average of twenty days from the commencement of treatment; 6 other cases were taking fish, but not the full fish diet, when they left the hospital. In the 34 control cases the result is very different; only 4 cases took the full ordinary diet before leaving the hospital, having reached this stage in an average of twenty-three days; the majority (namely, 22 patients) did not reach the stage of meat, leaving the hospital on a fish diet, which they reached in an average of twenty-two days after admission; 7 others were taking fish, but not the full fish diet. The average period before taking fish in these cases was seventeen days. From a consideration of these figures it is evident that the Lenhartz method of feeding enables the patient to take an ordinary diet without pain in a shorter time than treatment by nutrient enemas and a graduated milk diet.

In two of the cases in the first series, and two in the second, resort was had to *gastro-enterostomy*, which should be performed when medical treatment has repeatedly failed. In one further case in the first series the operation has just been done on my advice in a quiescent interval, as, although the patient responds excellently to medical treatment, she has had several recurrences. A small ulcer was found on the lesser curvature, adherent to an indurated area of pancreas.

It is important to bear in mind that the medical treatment of this disease should be carried out with as much care and precision as is required for surgical treatment. If this be done it will be found to be more efficient than many surgeons appear to think. As I have pointed out elsewhere, any patient who has been treated on milk or upon nutrient enemas, and has not recovered, is regarded by some as a fit subject for surgical operation. Whilst not minimizing the beneficial results of gastro-enterostomy in intractable cases, it must be pointed out that this operation is not an infallible cure for gastric ulcer. In the present small series it will be noted that three of the patients reapplied for treatment after this operation had been performed; another reports that she is still suffering from pain and vomiting. I have also seen a number of others in the out-patient department and elsewhere with recurrence of symptoms. Whether cases of gastric ulcer are operated upon or efficiently treated medically, the majority, for the time being, do extremely well, and the mortality from the disease in nearly all the published series of cases is extremely low. Gastro-enterostomy is not a dangerous operation under ordinary circumstances, but, as Paterson has shown, it is a dangerous operation when performed for haemorrhage. I believe, therefore, that this operation should be done only—first, in cases which, after prolonged medical treatment, do not yield; and secondly, in cases which, having been repeatedly treated by medical means, recur. Perforation and mechanical deformities of the stomach must, of course, be treated surgically.

It will be seen in the tables that in many cases the diet was not carried through in its entirety. My own impression is that the more thoroughly the treatment was applied the better the results; but I need hardly add that no physician will treat even the commonest complaints by rule of thumb, or will have any hesitation in modifying the prescribed formula when it seems best to do so. I have found, however, in the patients under my own care, that the need of such modification is the exception rather than the rule. To a few patients the diet is objectionable. Some prefer the egg and milk mixed, and some alternate teaspoonfuls of milk and of beaten-up egg with sugar. The addition of a little wine to the egg is also recommended, but I have not found this necessary. If the beaten-up egg excites nausea to the point of vomiting, egg-white without the yolk may be used. Instances are reported, and similar ones have come under my own notice, in which, in spite of a strong dislike to the food in the first few days, excellent progress has been made. As a general rule, the patients are comfortable and happy and appreciative of the relief afforded them.

As regards the *subsequent history* of the patients, I have been able, through the lady almoner of the hospital, to hear from 21 of the first series and 16 of the second.

Of the 21 patients treated by the Lenhartz method who have been traced, 9 have been well since leaving the hospital, 9 have had a return of the symptoms of gastric ulcer, and 3 suffer from indigestion.

Of the 16 patients traced who were treated by the usual method, 6 have been well since leaving the hospital, 8 have had a return of the symptoms of gastric ulcer, and 2 suffer from indigestion.

The two series are not absolutely comparable in this respect, for ten months longer has elapsed since the last patient in the second series left the hospital than is the case in the first. As the figures stand, however, we may conclude that the results of the Lenhartz method are at least as durable as those of treatment by nutrient enemas and a graduated milk diet.

The frequency of recurrence in each series is to be attributed partly to the difficulty of keeping hospital patients under treatment long enough. Unfortunately if the patient return to the old conditions an ulcer is liable to recur after either medical or surgical treatment.

A few statistics and criticisms of the Lenhartz method have been published.

Wagner,[6] in 1904, reported 60 cases, in 35 of which there was no pain from the beginning, and in only 6 did pain last beyond

* Since writing the above I have seen a case in which an extensive chronic ulcer in an elderly woman perforated while under a modified Lenhartz treatment, with a fatal result. The patient had left St. George's Hospital free from pain after this treatment, a fortnight before, but relapsed. The perforation was undiagnosed.

the first week of treatment. In 1 case the pain continued during the whole stay in hospital.

Haberman[4] reported that, in 1906, 135 cases had been treated by Professor Lenhartz in Hamburg, with 3 deaths, each of these fatal cases being very severe or complicated. A recurrence of haemorrhage took place in 8 per cent., as compared with 20 per cent. in 100 cases treated by the old method. Most were dismissed cured before the eighth week, and no unfavourable effects were produced.

Wirsing[8] reported 42 cases in 1906, 14 of which had had recent haematemesis. In one case haemorrhage recurred. In 27 of these patients the acidity of the stomach contents was estimated; it was found that during the treatment the amount and percentage of hydrochloric acid was diminished, the latter on the average from 0.14 to 0.11 per cent. Some cases did not show this, and yet progressed as well as the others.

The method of Senator, which has some similar features to that of Lenhartz, may be mentioned here. It consists of the administration of gelatine, butter, and cream from the beginning. He (see reference [13]) has reported 50 cases fed upon this diet, of whom 2 died, that is, 4 per cent.

Ewald[9] uses nutrient enemas for three days after a haemorrhage, and then gives milk, butter, and eggs, followed by other foods, as in Lenhartz's plan. He reported 34 cases in 1906. The results, however, appear to be inferior to those of the Lenhartz method. In 14 cases death occurred either after operation or immediately after haemorrhage, and there was a recurrence of haemorrhage in 7 per cent.

Ewald considers that the Lenhartz method cannot be justified on theoretical grounds and is not worth the risk. The above facts and figures, however, do not support this view, and, so far as data have been collected, it appears to be less risky than other methods of treatment.

Lenhartz in 1906[10] reported 140 of his cases, all with recent haemorrhage by the mouth, or melaena. These include some of those reported by Wagner and Haberman. The mortality was 2.14 per cent. He recommends that in such cases great care should be taken not to increase the bulk of milk too rapidly, and in some instances quoted the eggs were given without the milk for two or three days. In one case, by the twelfth day only 17 oz. of milk per day was being taken. The stomach should never be distended. He reports that in two of his patients who died, on the fifteenth and eighteenth day respectively, the ulcer was found to be smooth and healed. He recommends the diet strongly for patients who have recently had a gastro-enterostomy performed.

Lambert[11] in 1907 published 5 severe cases, all of whom did well on the treatment. One was a woman of 32 years, who, after seven days' rectal feeding and seven days' careful feeding by the mouth with peptonized milk, still had occult blood in the stools and a haemoglobin percentage of 39, and the question of operation was being mooted. The Lenhartz treatment resulted in a cure. Another patient objected to the diet, even to the point of nausea and vomiting, but nevertheless, after the cessation of the diet for one day, did well. In another haemorrhage went on until the thirteenth day, and the case was regarded as below the safe limit for surgery, and yet made a good recovery on this treatment. A fourth case, with signs of peritoneal irritation, leucocytosis, and a temperature of 100° to 104°, also recovered. In a fifth case, in which the haemoglobin was reduced to 20 per cent., in spite of an attack of enteric fever upon the twenty-second day, the treatment proved successful. Lambert's fourth case resembles one which came to my notice after the figures which I have given had been collected. A young woman of neurotic temperament was treated by Mr. G. E. Friend for gastric ulcer on the Lenhartz paln. She had no pain for four days, when vomiting recurred, with rigidity of the upper part of the abdomen. Perforation was discussed; the patient was put upon enemata, and made a good recovery. It is a matter of conjecture whether she would or would not have recovered equally well if, as in Lambert's case, the treatment had been persisted in.

Berger,[12] in a publication from the Hamburg school, points out that so efficient has the method of treatment been found in the Eppendorfer Krankenhaus that it has proved useful as a method of diagnosis, for in cases which fail to respond the diagnosis has, in many instances, been at fault. He quotes six cases in which the failure of the diet led to the diagnosis of cancer, which was confirmed by operation in four of them and in two by autopsy. In another case haemorrhage was found to arise from dilated veins about the oesophagus due to cirrhosis of the liver. He says, further, that in cases of pain without bleeding which do not yield, nervous diseases may be suspected.

Schnütgen[13] mentions in 1907 that Lenhartz had then treated 201 patients, with a mortality of 3 per cent. This is about the same as the mortality in 195 cases treated by nutrient enemas by Leube, which was 4 per cent. Leube has altogether collected 556 cases, with a mortality of 2.2 per cent., but many of these were not of the hospital class.

It appears, therefore, that the death-rate of patients treated by the Lenhartz diet is not greater than that of those treated in other ways.

Finally, Dr. Langdon Brown[14] in a recent paper mentions that he has treated 11 cases by the Lenhartz method with good results in 9 of them.

In conclusion, from an examination of these two series of cases, it may be said:

First, that the Lenhartz method of treatment is not more dangerous than treatment by nutrient and saline enemas followed by a graduated milk diet. In these particular cases the recurrence of haemorrhage was less frequent, and there were no deaths.

Secondly, that the pain suffered by the patient in the course of treatment is less on the Lenhartz diet.

Thirdly, the diet gives far more nourishment than can be introduced into the body by nutrient enemas, and is, therefore, more desirable in patients who have frequently been for a long time in a state of semi-starvation, or have suffered a loss of blood, or both.

Fourthly, that in cases treated by this method rectal injections may be entirely avoided. This is an advantage in a hospital, and a still greater advantage in treating cases at their homes, where rectal injections are not only regarded as extremely unpleasant, but are seldom efficiently administered.

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THE EARLY DIAGNOSIS AND TREATMENT OF CANCER OF THE STOMACH.*

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THERE can be no doubt about the importance of this subject. The stomach is a very common seat of primary malignant disease; indeed, in nearly half of all the cases of carcinoma seen in the *post-mortem* room the primary seat of the disease is in the stomach, and although figures from the *post-mortem* room indicating the allocation of primary cancer to different organs cannot be accurately transferred to the living, for many cancers—for example, of the breast—which can be easily observed are excised early, yet the *post-mortem* figures show that cancer of the stomach is terribly frequent. It causes 1.5 per cent. of all deaths at Guy's Hospital. The necessity—if we are to do any long-lasting good to these patients—of an early diagnosis is obvious, for we know of no medical means of successfully treating cancer of the stomach, and with our present knowledge we know of no other proper treatment for cancer than excision, but my experience is that almost invariably by the time a patient comes into the hospital, or by the time a consultation is sought in private practice, the disease is too advanced for excision.

There are many cases in which an early diagnosis is impossible, for the patient does not seek advice until secondary deposits have developed. Thus it is not uncommon for the patient not to consult a doctor until he has secondary cancer of the liver, and in some such cases the most careful examination and investigation of the history fails to suggest the seat of the primary growth. Still in some cases at least there might, I think, be some improvement in our early diagnosis.

The patient's history is of the greatest importance. Three-fourths of all the cases occur between the ages of 40 and 70, and that in spite of there being far fewer people alive then than at earlier periods. There are an enormous number of persons who suffer from dyspepsia unassociated with any organic disease, but such usually have symptoms of dyspepsia when they are young adults, therefore if symptoms of serious chronic gastric indigestion first appear after the age of 40, organic disease of the stomach should be strongly suspected, and if a comparatively short period of medical treatment does not effect a cure, it may be quite justifiable to open the abdomen to see if a growth is present, and, if possible, to take it away. In all cases of gastric carcinoma the uttermost endeavour must be made to diagnose carcinoma of the stomach before the

* Remarks made in introducing a debate on the subject to which the paper relates at the Harveian Society of London.

growth becomes tangible, for usually by such a time the period during which the growth could be excised has passed. There is no doubt that sometimes a simple ulcer of the stomach becomes cancerous; precisely how often this happens is very difficult to estimate. A simple ulcer becoming cancerous may occasionally be seen in the *post-mortem* room, but it is only reasonable to suppose that statistics from the deadhouse would underestimate the number of simple ulcers which became cancerous, for by the time of death the mass of growth is often so great that it is impossible to say whether or not a simple ulcer preceded it. On the other hand, clinical histories are very fallacious; often a history strongly suggestive of a previous gastric ulcer may be obtained from patients who have never had an ulcer. Nevertheless, Dr. W. J. Mayo, out of a large number of operations on the stomach, found that a malignant growth had appeared on an ulcer in about half the cases of gastric carcinoma, therefore a history of previous symptoms suggestive of ulcer of the stomach is a help to the early diagnosis of cancer of the stomach; but I have known a confident diagnosis of this disease made in a patient who gave a long history of ulcer, and who had a considerable mass to be felt in the region of the pylorus, but it turned out that no growth was present; the mass felt was the puckering and adhesion in connexion with a large ulcer. However, in these cases the ulcer itself may demand surgical treatment, and therefore opening the abdomen would be justified.

The commonest symptom of cancer of the stomach is pain, therefore we should be chary of diagnosing this disease if it is absent; on the other hand, constant pain is a considerable point in favour of such a diagnosis. Although the general health of the patient may be misleading, for sometimes it remains good, even when the growth has attained considerable size, yet usually those with cancer of the stomach feel more weak, are much wasted and are more anaemic than those whose dyspepsia is not associated with a growth. The red cells may fall to 3,000,000, the colour index to 0.6, and there may be a small increase in number of polymorphonuclear cells. Loss of appetite, nausea, and repugnance to food are usually well marked quite early in cancer of the stomach. On the other hand, these symptoms are often absent when the indigestion is not due to growth. And we must always remember that the probability of cancer is greatly increased if any or all of these dyspeptic symptoms resist ordinary dietetic and other medical treatment.

Much attention has been directed to the amount of free hydrochloric acid present in the stomach of those suffering from gastric carcinoma. It is best after the fasting of the night to wash the stomach out with some water, then to give a test meal, such as a little bread and butter and milk, and an hour and a half after to siphon out the gastric contents. It appears that in a few cases of gastric carcinoma the free hydrochloric acid is not diminished, and it has been stated that this is especially likely to be the case when the carcinoma has developed on the site of an ulcer. Further, in many other gastric conditions, for example, atrophy of the gastric mucous membrane, and chronic gastritis, the hydrochloric acid may be diminished, although on the average not to the same extent as in gastric carcinoma. Carcinoma anywhere will diminish the amount of free hydrochloric acid —for example, in a case of carcinoma of the penis it was reduced to 0.00078 per cent. (the normal being 0.1951 per cent.). But the presence of carcinoma in other parts of the body is frequently easy of recognition. Therefore, in a case in which gastric carcinoma is suspected, the diminution of free hydrochloric acid is of help in diagnosis; but it must be a considerable diminution, for various diseases other than malignant disease will diminish it somewhat. These results are the outcome of work by Moore, Morton Palmer, and others. The observations must be made by competent chemists, for it is not an easy matter to estimate the percentage of free hydrochloric acid in the gastric contents.

It is hardly necessary to mention that these should be carefully examined under the microscope, for occasionally cancer cells may be seen. Sometimes, too, the presence of a few blood discs or blood pigment, as shown by the guaiacum test, will be of help in diagnosis; but before relying on the guaiacum test we must be sure that the patient has not recently taken any meat. The occurrence of haemorrhage for the first time from the stomach in a person past the age of 40, if he gives no history suggestive of ulcer, and has not an obvious cause—such as cirrhosis—for his haemorrhage, is strongly suggestive of cancer. In 35 to 40 per cent. of all the cases of gastric carcinoma the vomit at some time or another contains blood visible to the naked eye.

In rather over 60 per cent. of the cases of carcinoma of the stomach the growth is at the pylorus, and in a considerable number of such cases there is a consequent obstruction to the exit of food from the stomach. Percussion without artificial distension is an uncertain means of estimating the size of the stomach, and a little succussion is fallacious; therefore these signs should not be relied upon in determining whether the patient has some gastric dilatation as a result of pyloric obstruction, but if a patient is given some bread and milk mixed with bismuth oxychloride and then examined in a vertical position by the *x* rays with a screen, delay in the passage of the bismuth through the pylorus may readily be seen; and indeed probably the bismuth method may sometimes help us to discover a growth in other parts of the stomach, for the passage of the bismuth in a normal stomach is such a regular uniform motion that, if any of it adhered to the growth or this impaired the regular contraction of the stomach, we might see the unusual movement of the bismuth on the screen. An examination by the *x* rays may be of great help in the diagnosis of cancer of the stomach, but too much reliance must not be placed upon it as a means of estimating whether the organ is dilated, for the position of the lower border of the stomach is very variable in health. Vomiting large quantities at a time of sour material is evidence of gastric dilatation, but we ought to try to diagnose these cases before the quantity is excessively large. Lactic acid in the vomit indicates pyloric obstruction, for it shows that the gastric contents have remained in the stomach long enough to decompose, and this too is the significance of the Oppler-Boas bacillus. Visible peristaltic movements of the stomach, generally best elicited by flipping the abdominal wall, are a valuable sign, for, as they indicate hypertrophy of the gastric muscle, if they are present we may often infer that the pylorus is obstructed. Dilatation of the stomach may, too, be made out by percussing the organ before and after the patient has swallowed a solution of bicarbonate of soda followed by some lemon juice. With regard to all these symptoms of dilatation of the stomach, it must be remembered that in order to diagnose gastric carcinoma from them we must show that pyloric obstruction is the cause of the dilatation; hence the value of the bismuth method and visible peristalsis.

Even when the growth cannot be removed, or secondary deposits render this undesirable, much benefit often follows a gastro-enterostomy if there are signs of pyloric obstruction. The vomiting ceases; the patient digests his food better and gains weight. Life will be prolonged partly for this reason, and probably because some of the gastric contents will no longer pass over the growth and hence it is less irritated and it will grow more slowly. It is, I think, clear that there are no means of infallibly diagnosing cancer of the stomach in its early stages; but I do believe that by carefully considering a number of points we might sometimes arrive at a diagnosis earlier than we do, and therefore give the patient the chance of excision, for medicines are powerless to cure him. Speaking generally, it is only in the early stages that excision can do any good, for secondary deposits usually form rapidly, and before subjecting the patient to an operation the whole body must be thoroughly examined to ascertain if any can be detected, and special attention must be paid to the liver and the left supraclavicular glands. Further, each individual case must most carefully be considered, for there is no doubt that many persons have had their lives shortened by excision of a gastric carcinoma; perhaps this, however, would not so often have been the case had the diagnosis been reached earlier. Lastly, even if it is decided that excision is impossible, consideration should be given to gastro-enterostomy, for the relief which follows this when the pylorus is obstructed may be very great.

THE EARLY DIAGNOSIS AND TREATMENT OF CANCER OF THE STOMACH.*

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A DEBATE upon the early diagnosis and the treatment of cancer of the stomach is most necessary, for the disease claims approximately 1,500 victims every year in England; it is seldom that we are enabled to do much to relieve those who suffer from it, and the cases that we have cured are so few as to be almost negligible. It is only by the close association of the physician and the surgeon, and by their united endeavours, that any hope of improvement in this lamentable state of affairs can be entertained. The opinions which I am about to express will probably not meet with the approval of all, may perhaps encounter the strong opposition of some, but they are views which I have been brought by degrees to hold firmly, and I am here to speak of the faith that is in me.

Anamnesis.

It has long been a practice of mine, in eliciting the anamnesis of patients referred to me with any abdominal disorder, to endeavour to disentangle their thoughts from the present phase of the disease, in order to concentrate them upon the very earliest departures from health of which they have knowledge. A little persuasion, a little patience, and constant encouragement are sometimes necessary before the whole story will be told, but the time is well spent, and the inaugural symptoms, which are of the highest significance, are then disclosed. If this course be followed with patients who are subsequently shown, by operation, or autopsy, or by the later developments of their disease, to be suffering from carcinoma of the stomach, all three different types of clinical history will be elicited.

In the first the patient stoutly denies, nor can any persuasion induce him to recall, any earlier illness or suffering in connexion with the stomach. He will say that his digestion has always been of the best, and that all foods have been alike to him, all have been taken with zest, and that "dyspepsia" or "indigestion" has never in the slightest degree troubled him. In this condition of good, even robust, health there has been a forcible and abrupt intrusion of symptoms hitherto unknown. A sudden haemorrhage from the stomach may occur, one or two pints of blood being brought up, and from that moment there appear the symptoms indicative of a gross lesion of the stomach. The anaemia which follows so free a haemorrhage persists unduly, and food, especially meats, fat or lean, becomes distasteful. A sense of uneasiness, distress, weakness (it is variously described) is felt in the epigastrium; vomiting may be repeated, weight is lost, and a palpable tumour rapidly develops in the stomach wall. As a characteristic example of this class I will quote the following cases:

Mr. F., aged 34. Sent by Dr. Mitchell, Oldham. Up to nine weeks before I saw him, on October 26th, 1908, the patient had been perfectly well. The closest examination failed to reveal any history of former trouble in the stomach. His father-in-law told me that he was "the heartiest man in Oldham." Nine weeks before he had begun to suffer discomfort one hour after food; there was a feeling of fullness and flatulence in the epigastrium and abundant eructation of gas, which at last was almost rancid in its offensiveness. There was never severe pain, only a sense of "weight and stagnation." The patient repeatedly said he felt as if there were "something in the stomach that would not move on"; and he felt that the food could not get away. Four weeks later he began to vomit, and did so every day for more than a week; then occasionally there was a day when he did not vomit, and when that was so he afterwards noticed food which had been taken the previous day in the vomited material. Vomiting had ceased for over a week before I saw him. There had never been haematemesis nor melaena. From the beginning, but especially during the last month, he had got weaker and thinner and very much paler. When I saw him he was profoundly anaemic; his face was of a white waxen appearance, and the mucous surfaces were almost bloodless. In the epigastrium I found a tumour whose upper margin was well defined, but whose lower was indefinite. The tumour moved on respiration; there was no dilatation of the stomach. The contents showed no free HCl; lactic acid was present. Oppler-Boas bacilli were innumerable. I found on opening the abdomen there was a growth along the whole length of the lesser curvature, and that throughout the stomach there were deposits of growth resembling boiled sago grains. Glands in all directions were enlarged, and there was a very large secondary growth in the liver. He died on December 23rd, 1908. The growth in the liver had increased considerably.

Mr. J., aged 63. Sent by Dr. Malim, Rochdale. Up to August, 1907, he was perfectly well. He was a man who had led a busy life, amassed a fair fortune, and had lived carefully. There had never been any indigestion nor any abdominal disorder of any kind. There was, in fact, as the patient said, "a clean bill of health." In August, 1907, he had a severe attack of haematemesis; he did not remember ever having vomited before, and he had never vomited since. After this he was weak and ill and very anaemic, but he gradually improved in appearance and returned to business. He had, however, lost all appetite; he could not take any meat, and soon gave up all solids. Weight was lost rapidly. I saw him on March 14th, 1908. He had the frame of a big man, but his clothes hung loosely upon him. He was very anaemic, and capillary vessels stood out prominently against the white background of his cheeks. He took very small quantities of soups and milk and tea. In the epigastrium a large, ill-defined tumour could be felt. Lavage and examination by test meal showed long stagnation of all the contents of the stomach, which contained blood, yeast, pus, and bacteria. At the operation I found a growth involving the lesser curvature near the pylorus, and, passing behind the stomach adhering to the pancreas, it involved the greater curvature also. There were several sago-like bodies on the surface of the pyloric portion of the stomach. I performed anterior gastro-enterostomy, with slight temporary benefit.

In the second class are placed all those cases in which a clear history of chronic gastric ulcer can be obtained. In some of these cases there has been only one attack, or possibly two or three attacks rapidly succeeding one another within the period of a single illness, followed by a complete abeyance, or at least a complete latency of all symptoms until the onset of the malignant disease. In other cases the patients have had a long series of attacks, in many respects closely similar to the present one, of "indigestion." These attacks have been characterized by pain, appearing always at a definite interval after food, the interval being longer or shorter according to the character of the food taken. After a solid meal the pain appears rather more slowly, but is unmistakably more severe; after a meal consisting of fluids only the pain comes more quickly, is less severe, and passes away more rapidly. The pain varies in its position, but is usually referred to the middle line, where a tender spot can generally be discovered. The left or the right costal margin may be tender, and the radiations of the pain may be to one side or another, or through to the back. Vomiting is not a frequent symptom; when it occurs it brings instant relief, and a habit of inducing it may accordingly be developed by the patient, who is confident of obtaining ease in that way. Attacks are prone to come more often in cold weather, or as a result of a chill, or by reason of increased work, worry, and anxiety. In some cases the evidences of stasis may develop, though they rarely become dominant. The patient, long accustomed to suffering, may be resigned to the restricted diet of a "chronic dyspeptic." One patient—a lady who celebrated her silver wedding a few days after I had operated upon her—had never, within the period of her husband's knowledge of her, eaten one solid meal. The foods usually taken are of the light, easily masticated, and easily propelled foods. In the history of many patients, however, there are "latent periods" during which food can be taken, if not with a keen relish, at least with better appetite and enjoyment than is usual. But after such a period there is again the breakdown, and pain in its characteristic form returns. An occasional indiscretion, even when the patient is quite well, may bring a reminder of the need for care, and certain articles of diet must be sedulously avoided at all times. Experience of repeated troubles has imposed upon the patient the necessity for care in the selection of a dietary. The "attacks" are without question due to a chronic gastric ulcer. When we operate to-day upon patients who recount these symptoms the chronic ulcer can always be found and demonstrated. After a history of repeated attacks, alike in onset, in character, duration, and relief, comes one attack at first so closely resembling all the others that it is with difficulty to be distinguished as having a special significance, but by degrees revealing a sinister importance and leading on by stages, presently to be described, to a condition clearly due to cancer. This group is indubitably the most common. Approximately, two out of every three

* Remarks made in opening a discussion at the Harveian Society of London.

cases in which carcinoma of the stomach is found in my series give a history of this kind. One or two examples may be given:

Mr. M., aged 48, sent by Dr. Wesley Smith, seen by me August 8th, 1908. The patient has been "bothered with indigestion for years." The pain has always been definitely related to the taking of food. His meals have often been hasty; he has "bolted" solid food, and the meal times have been most irregular. After special stress of work, he has often had to "give up entirely" because of an attack of indigestion. Pain has come usually 1½ hours after food, and the food has then begun to regurgitate; and a feeling of great oppression and fullness has been relieved by belching. About an hour after food he had "miserable discomfort," which a hot drink would often relieve. The present attack began about Christmas, 1907, and has continued ever since. He has lost over 4 st. in weight. Recently his discomfort has only been relieved by getting the food back. He is easy when the stomach is empty, and never at any other time. On examination, a tumour is palpable, and on slight inflation peristaltic waves are visible. Operation October 14th, 1908. A large tumour occupying the lesser curvature up to the pylorus, and extending down both surfaces. Partial gastrectomy. The growth was malignant, and had begun in a saddle-shaped ulcer.

Mrs. A., aged 45, sent by Dr. Horsfall, Slaithwaite, seen July 10th, 1907. The patient says that she has suffered from her stomach "all her life." When asked to be more precise, she says that she remembers very well an attack when she was 20 years old, and that was not the first. In an attack pain came about one hour after food; the pain was worse after heavy foods, but came more quickly after liquids. Vomiting at first did not occur, has since been frequent, but has always brought relief. No blood has been seen at any time. In the intervals between attacks she feels very well; the longest interval was rather more than a year in duration. The last attack began at Christmas, 1906. The pain was of the same character, but became by degrees more severe. Diet was restricted to fluids, but pain persisted, and recently has been almost constant. Vomiting has been frequent during the last few weeks. Has lost in this attack 20 lb. Does not improve with the same treatment as before. I operated upon her on July 19th, 1907, and performed partial gastrectomy. There was a large pre-pyloric growth; a great many glands in both omenta, and the right suprapancreatic glands and the subpyloric group were especially large. The patient died in September, 1908, having had three "fits" on the two days preceding her death.

In 3 cases in my series perforation of an ulcer had occurred twenty-six, ten, and four years previously. In the first case the perforation had been of the "chronic" type, and a perigastric abscess had formed. In the others the history suggested that the perforation had been of the "subacute" type, and the conditions found at the operation lent strong support to this view.

Symptoms of Cancer.

This being the early history, what are the symptoms which are present in the final attack which proves to be due to malignant disease? The patient notices, by almost imperceptible degrees, that the relief which has formerly come for a brief period after a meal is curtailed, that pain comes more speedily or is not relieved at all. It is not long, therefore, before food is taken in lesser quantity, and becomes restricted to fluid forms alone. There is often a distaste for meat, especially for fat meats, as observers long ago noticed. The zest for food is lost entirely, and there is often a positive repugnance to it. While the ulcer is still simple there is rarely a distaste for food; on the contrary there is often a feeling of great desire for food but experience has shown that indulgence is followed by distress or pain. I have commonly heard it said, "I could eat anything, but I dare not." In patients suffering from well-established cancer this is never heard; the cry is always that the thought of food is abhorrent, and it is difficult to persuade a patient to overcome his intolerance. There is, then, little or no freedom from pain, and a sense of uneasiness, or "sinking" in the epigastrium; yet the pain is never severe, is often not a matter of complaint at all. Food which has been taken "lies heavily" on the stomach, and regurgitation of it may occur, and a nauseous, bitter, but not acid, taste is noticed. There is often much flatulence and eructation of gas. There are times when the gas and the vomited matters are unendurably offensive. The lessening of the size of the stomach by the discharge of either gaseous or fluid contents always brings relief. Very early in the attack anaemia is seen; it is not, as it may have been before, the anaemia which can be attributed to a large and noticeable loss of blood; it is rather a gradually deepening pallor, the face seeming of a whiter colour than the rest of the body. It is not infrequent for the colour to be of the faintest yellow tinge, and the resemblance to the hue of pernicious anaemia is very close. In all such cases there is a continuing loss of blood, as examination of the stomach contents, removed by the tube, or of the faeces, will show. Anaemia is, perhaps, the most striking of all the signs which indicate the onset of carcinoma in the stomach. The appearance of the patient with pallid, shrunken face, and features preternaturally sharp, the skin being dry and harsh and withered, will often rouse the first suspicion of the gravity of his disease. Loss of weight is continuous; at first it, perhaps, hardly attracts attention, but as soon as note is taken of it, a steady and unchecked wasting is observed. General weakness, indifference to many of the affairs of life which formerly held an absorbing interest, languor and lassitude are all seen in greater, than in less, degree. Such is the complete picture seen in the majority of the cases of carcinoma. A discrimination of two distinct types can usually be found in all cases where the pyloric half of the stomach is the seat of disease. These I would designate as cases of "pyloric" and of "prepyloric" growth. In the former the symptoms almost from the first suggest the presence of a hindrance at or near the pylorus. Vomiting is among the very early symptoms, and dilatation of the stomach, with stagnation, and the periodic return of the long-delayed food, occur. These cases are recognized early, owing to the inability of the patient to take food, either solid or liquid, with comfort, and to the overt character of the cardinal symptom, vomiting. The danger is in mistaking, as I have unhappily done, on more occasions than one, the growth for a chronic ulcer. A palliative operation, gastro-enterostomy, is then performed, when a radical operation, partial gastrectomy, is needed. In the "prepyloric" form the symptoms are such as I have already described; they are general and constitutional rather than local, and are, therefore, less compelling in their interest. The ulcer, and the growth which follows it, are found upon the lesser curvature away from the pylorus; the ulcer has probably been, and may often be shown to be, saddle shaped, and consequently a high degree of obstruction does not come till late. The mere presence of a growth on the lesser curvature—or, indeed, of an ulcer also—seems to do something to impede the passage of food onwards, possibly by entanglement of the nerve supply; a zone of muscle of lessened power offers obstruction in some sort, and causes both stasis and vomiting.

In the third group the patients, who are generally between 40 and 45 years of age, give a history which, in all its essential details, is identical with that in Group 2. But there is one significant omission. No history of any illness which can be referred to a structural lesion in the stomach can be elicited. The whole clinical course is comprised in the one sustained illness which, without haste but without pause, has brought the patient into a condition of serious ill-health. The symptoms in their earlier stages are pain, which appears sooner or later after food, and is worse after solid food to such a degree that liquids soon form the whole dietary; occasional vomiting, and possibly haematemesis or rarely melaena, and loss of weight. There is nothing alarming or particularly distressing in the symptoms, but it is their persistence rather than their prominence which finally attracts attention. Wasting anaemia and perhaps vomiting become conspicuous, and at last it is realized that the patient is probably attacked by some serious organic disease.

At the operation carcinoma is found, and, most important point of all, the growth, in my experience, is sometimes found to be in the site of a chronic ulcer. In this group of cases there is no suspicion, clinically, or only a very vague suspicion, that a chronic ulcer of the stomach has ever been present. It is the pathological disclosures which make it probable or certain that in many an ulcer has formed, an ulcer which at the moment of its full development has straightway become invaded by an insidious malignant process. The change which occurs in this ulcer is in every feature the same as that which is noticed in the cases in Group 2; but in these the change comes in the first life of the ulcer, in the others only after it has many times healed and as often broken down again. The following is a good example:

Mrs. B., aged 46. Sent by Dr. McLeod, Outwood. Seen by me October 10th, 1908. The patient had been perfectly well up

to six months before. She then began to suffer pain one to one and a half hours after food; vomiting occurred shortly afterwards, and always gave some relief. There was never haematemesis. The pain gradually increased in severity, and latterly had been much worse after solid food, especially meat. At first there were periods during which she felt quite well, but lately the suffering has been continuous, and weight has gradually been lost to the extent of 11 lb. On examination there was a dilated, visibly acting stomach, and a lump the size of a hen's egg was palpable at the pyloric end of the stomach.

Operation.—The palpable tumour was seen to be a mass of malignant glands ("subpyloric" group). On the anterior surface of the stomach close to the pylorus was a hard round scar, with radiating puckers from it. Partial gastrectomy. Recovery. An examination of the specimen showed a large chronic ulcer of the stomach, at the lower part of which the edge was raised into a mass the size of a Barcelona nut. This was malignant, as also were the glands underlying it.

Relation of Gastric Ulcer to Cancer.

In the remarks I have already made I have done something more than hint at the connexion between ulcer of the stomach and cancer. Are we entitled to say that there is any proved connexion between the two? If we are, then chronic ulcer of the stomach must be ranked among the "precancerous" conditions; and if, further, the connexion be proved to be of either moderate or large frequency, cancer of the stomach is surely robbed of some of its terrors, for it is doubtless then to be enrolled among the preventable diseases. What is the evidence? In a previous paper, read before the Clinical Society of London in February, 1906, I collected and analysed all the cases of cancer of the stomach (58 in number) upon which I had operated up to July, 1905.[1] In the last 22 cases a history of chronic gastric ulcer was clearly obtained in 16; in 1 case there had been a subacute perforation of an ulcer on the lesser curvature near the pylorus. In 1 case the "attack" of gastric ulcer had occurred twenty-six years before; in the interval the health had been good and digestion sound, though care had always been exercised in the matter of diet.

Almost identically the same proportion has held good for my later cases, numbering over 100, and I am therefore in a position to say that of all patients operated upon by me for cancer of the stomach approximately two in every three have had a history of previous gastric ulcer. In the majority of those who give this history there has been a constant succession of attacks, similar in all their chief manifestations and brought about by similar causes. In the last attack the symptoms have been of a graver nature, more protracted, not amenable to the treatment, nor relieved by the drugs, which proved successful before; and by degrees it has become unmistakable that this attack is likely to prove of a far more serious character.

From the clinical point of view it is, therefore, certain that we must look for the inaugural symptoms of cancer of the stomach rarely among those whose former health has been good, often among those whose anamnesis tells sometimes of one, but, as a rule, of many attacks of "dyspepsia" or "indigestion," as they may be called. These attacks of pain come after food, are definitely related to the taking of food, are eased for a time by food, and there are also vomiting, inability to take or temporary dislike for solids, and loss of weight; the attacks, that is to say, are clearly to be referred to the presence of a chronic gastric ulcer. If, therefore, we are to concentrate our attention upon the early symptoms of cancer of the stomach, it is the patient whose stomach has long been a source of trouble to him that must chiefly engage our attention. But it is necessary to say that this patient, who is, so to speak, the most promising candidate for carcinoma of the stomach, can be prevented from developing this horrible affliction by a timely attention to the earlier simple disease. Cancer of the stomach, if it follows in the majority of cases upon chronic ulcer of the stomach, is so far, and in such numbers, a preventable disorder. In the surgical treatment of chronic gastric ulcer by the performance of gastro-enterostomy, or of Rodman's operation, may be the means of destroying the chances of a late malignant change from an early simple condition. It has often been said that "the onset and persistence of dyspepsia in a man over 40 years of age, who had previously enjoyed good health is a suspicious circumstance" pointing probably to the onset of carcinoma. I have found that in such cases the disease is more often simple than malignant, and that the lesion found is more frequently duodenal than gastric.

I am only too well aware of the doubt, even perhaps of the hostility, with which the suggestion has been received that ulcer of the stomach and cancer stand often in the relationship I have indicated. But impartial inquiry into the history of a long series of cases will support, I know well, the views I have expressed. Clinically there can be no longer any substantial doubt of the connexion. Is there any valid pathological evidence to support the belief which clinical experience has stimulated? I have no hesitation in saying that the pathological evidence now available supports fully the contention I have stated. In what manner should we expect that evidence to be obtained? I venture to answer that it could only be obtained from specimens examined in an early stage of the disease, at a time when the primary simple disease and the later cancerous change can be seen together. It is, then, necessary also to show that the former condition is earlier than the latter. A moment's thought will convince one of the truth that a specimen of this kind is hardly to be found upon the *post-mortem* table in the body of one who has succumbed at last to the steady and unchecked extension of a malignant growth. The only specimens which are likely to furnish valid evidence must be obtained by operation. The best of these specimens are found when a chronic ulcer, as the appearance suggests, is removed by Rodman's operation. Though no suspicion of malignancy may have crossed the surgeon's mind, the pathological examination will disclose the undoubted evidence of early malignant disease in an area where the ancient marks of simple disease are plainly to be seen. In this connexion one cannot but offer a tribute to the remarkable work which has been done in the clinic of Dr. W. J. Mayo and Dr. C. H. Mayo at Rochester. I had the privilege a few months ago of seeing the specimens of partial gastrectomy removed by them, and of having the pathological conditions demonstrated to me. No one who has seen the evidence there produced doubts any more that cancer of the stomach is frequently the offspring of an early simple disease. Dr. W. J. Mayo[2] has recorded the fact that, in 180 cases of resection of the stomach, cancer was demonstrated to have sprung up in the base of an ulcer in 97, that, is in 54 per cent. My own experience supports this statement fully; indeed I have myself found the percentage even a little higher in my recent cases.

The connexion between chronic ulcer of the stomach and carcinoma I hold, therefore, to be established so far as Group 2 is concerned. Is there any relationship between the acute cases of cancer of the stomach, cases which seem to have in them something akin to an acute infection, and ulcer? There is no history of chronic ulcer in this class of case; the disease seems to begin acutely and to spread rapidly; in my own work no permanent relief has ever followed operative treatment, and the benefit obtained by the palliative operation of gastro-enterostomy is too often quite inconsiderable. Recently I have come to believe it possible that in these cases also an ulcer may be the starting point of the malignant process. The ulcer in such cases is of the "acute" type; one or more "haemorrhagic erosions" are present, and in these cancer is deposited and spreads there with the most intense rapidity.

If carcinoma should be conclusively proved to be the final change in the long series of changes which have led up to and established a chronic ulcer in the stomach, is it not in this case merely repeating the experience we have gained of its habits in other parts of the body? We know how frequently cancer of the tongue develops as a last change in a series of conditions all of which are simple. It is only the bare truth to say that cancer almost never develops in a tongue previously healthy; where a malignant ulcer is present other changes are seen around it, and these have been present, always for months, often for years. Cancer is there only a local exaggeration of or a later change in a condition of things distributed over other parts, or over the whole of the tongue. It is the same with the lip, and with the ulceration of old scars due to burns. The development of cancer on the corona as a result of the irritation of smegma retained by a too long and too tight prepuce was pointed out more than a century ago by the first William Hey of Leeds. In the breast the transformation from chronic mastitis to

malignancy is no longer doubted. In the gall bladder it is commonly seen. And instances might easily be multiplied. Surely the one thing of which surgeons feel sure in respect of cancer is that it seems most often to occur in those parts where mild irritation has long been present.

Exploratory Incision.

A review of the cases which have been under my own care has convinced me that though the history, especially in so far as it tells of former attacks of chronic gastric ulcer, may awaken a keen suspicion as to the presence of a carcinoma in the stomach, and though all the contributory evidence to be derived from the chemical examination of the stomach contents may go towards a confirmation of the diagnosis, there is only one means of making an assured diagnosis in an early stage. An inspection of the parts, and this alone, and that indeed not always, can give us the information upon which a probable diagnosis can be made. It is necessary for us to realize that by any other methods than this one a positive diagnosis of cancer in the stage when it is capable of successful treatment is almost impossible. If the patients who are suffering from this most insidious and most terrible disease are to have any fuller prospect of relief, or of cure, the use of the exploratory operation must be greatly increased. I deprecate more strongly, I believe, than most surgeons the adoption of the "exploratory incision"; but every argument and all experience show that in cases of carcinoma of the stomach no other method than this offers any slenderest hope for the betterment of the present deplorable condition of affairs. But before we are entitled to advise any patient to undergo this operation we must be confident that there is a well-grounded suspicion that some condition not admitting of remedy by any other than surgical means will be found.

Indications for Operation.

I think that an operation should be advised in the following circumstances:

(*a*) In all cases of chronic gastric ulcer. The recent experience of surgeons has shown that a diagnosis of chronic gastric ulcer can be made with great accuracy, and that not only the presence but also the position of the ulcer can be accurately predicted. When repeated "attacks" occur it is idle to consider any other than operative treatment, for nothing else can give permanent relief. In any attack occurring in a patient over 40 years of age the need for surgical intervention is becoming urgent.

(*b*) When gastric stasis is present. This is a condition the existence of which is easily determined. If there are symptoms suggesting structural disease in a stomach incapable of emptying itself completely in from ten to twelve hours, then the conditions which exist are mechanical, and can be remedied by none other than mechanical means.

(*c*) When a tumour is present. The tumour may be simple or malignant, but research is better conducted by inspection than by any other means at our disposal.

In these three conditions medical treatment may do something to relieve, it can do nothing to cure. There is accordingly no reason for delay in advocating operation. If this is done, and done early, many cases of carcinoma that now drift quietly into the inoperable stage may be saved.

The position seems now to be this—that there are no signs or symptoms clearly indicative of the presence of gastric cancer; there is no refinement of clinical inquiry nor any endowment of clinical acumen which will enable a confident diagnosis to be made in an early stage; inspection of the stomach during an operation carried out when definite faults in its working are known will permit of the early discovery, or of the prevention of a certain proportion of the cases of cancer. The surgeon must not ask the physician for a sign which will reveal the presence of this disease to him, but he can and should require that those conditions which are only to be remedied by operative measures should be referred to him not in their advanced or terminal stages, but at the earliest moment of their recognition. The success which has followed the surgical treatment of gastric disorders justifies this simple request.

Chemical Analysis of Gastric Contents.

A point which cannot be ignored in any discussion upon the early recognition of cancer of the stomach has reference to the condition of the stomach contents. Much has been written with regard to the value of a chemical examination of the stomach contents in cases of gastric carcinoma. It is my practice to have all stomach cases examined as a matter of routine, and I place some reliance upon the results so afforded. But it is necessary that more examinations than one should be made, and that the circumstances should be changed in some of the examinations. The fluids removed from the stomach after several hours of fasting, after a test meal preceded by lavage, and after a meal consisting chiefly of albumens should be examined. The characteristic result in cases of cancer shows absence of free HCl, a diminished total acidity, the presence of lactic acid, and the presence of Oppler-Boas bacilli. Briefly stated, my opinion is that the early diagnosis of carcinoma of the stomach receives only the slenderest help, if indeed it receives any, from those examinations; whereas, in the later cases, a suspicion of malignancy receives strong confirmation if the characteristic conditions I have named are found.

Conclusions.

I would endeavour to sum up my knowledge of cancer of the stomach, as revealed to me by a study of the cases which have come to me for surgical treatment, in the following propositions:

1. Cases of cancer of the stomach when examined in regard to their previous history may be divided into three groups: (*a*) Cases, generally acute, in which the symptoms appear suddenly and progress rapidly; the whole history may be confined within a space of four to nine months. (*b*) Cases in which there is a history of one ancient attack, or of repeated attacks, due undoubtedly to the presence of a chronic gastric ulcer. (*c*) Cases in which there is no previous history of gastric ulcer; in some of them a condition of "ulcus carcinomatosum" may be found.

2. The acute cases are not seldom ushered in by an attack of severe haematemesis, with or without melaena. It is possible that such copious bleeding is dependent upon multiple haemorrhagic erosions.

3. The importance of a history of repeated attacks of indigestion, alike in their origin, course, and termination, cannot be exaggerated. Such attacks are due to a chronic gastric ulcer, which at last becomes malignant.

4. Cancer of the stomach, in so far as it depends upon a chronic ulcer for its origin, is a preventable disorder. It is probable that two-thirds of the whole number of cases may be so classed.

5. The final attack is distinguished from former attacks by its lingering character, its rebellion against the treatment, dietetic and medicinal, which has proved helpful before, but chiefly by the presence of a profound distaste for food, anaemia, and a progressive loss of weight.

6. The chemical examination of stomach contents is of little or no value in so far as early diagnosis of carcinoma of the stomach is concerned. In the later cases, when a possible diagnosis of malignancy is made on the clinical evidence, the results of repeated chemical analyses of the stomach contents afford additional evidence of considerable value.

7. Surgical treatment should be advised in all cases of stomach disorder where there is obstruction, stasis, or tumour, and in all cases of chronic ulcer; in this way early cases of carcinoma will be found, and radical treatment will be possible.

8. There are no symptoms, and there are no signs which, individually or collectively, permit of an assured diagnosis of cancer of the stomach in an early stage. In cases where there is grave suspicion an exploratory operation should be advised. Such operations should be practised to enable a diagnosis to be made in an early stage, not to confirm an almost certain diagnosis in a hopeless stage.

The surgical treatment of cancer of the stomach is now based upon sound principles, as a result of the work of many labourers in different fields. When the growth is seated at or near the pylorus, or along the lesser curvature of the stomach (and these are the cases we are chiefly considering), the anatomical and pathological investigations have indicated certain essentials to be observed in order that the whole growth, and the lymphatic area in

connexion with it, may be eradicated in accordance with those principles now generally held to be necessary in dealing with any form of carcinomatous disease.

After a study of all the factors, we are in a position to lay down the lines upon which an operation for the removal of a malignant growth beginning in the pyloric region of the stomach should be based. It is essential that the whole growth should be taken away, and such a margin beyond the visible and palpable tumour as shall ensure that the outlying nodules are within the lines of section; that all the lesser curvature, that one-half of the greater curvature, and that an inch at least of the duodenum should be removed; that all the "primary" glands at least should be taken (these are the lower and upper coronary, the right paracardial, the suprapyloric, the right suprapancreatic, the right gastro-epiploic upper and lower, and the retropyloric). The removal of all these parts is possible, and therefore the somewhat mournful view of the possibilities of the surgical treatment of cancer of the stomach taken by several writers are not justified. The difficulties to be encountered will chiefly lie in the removal of the right suprapancreatic glands, but that these difficulties are exaggerated is, I think, quite certain. In several cases I have, by using the "gauze stripping" method, removed the glands without any injury either to the hepatic artery or to the pancreas.

The following are the steps of the operation, as briefly outlined as possible:

1. The free opening of the abdomen in or near the middle line; the inspection of the parts; the packing of swabs around the area to be engaged in the operation, so as to avoid any soiling of the parts. Nothing except the viscera at the moment engaged in the operation should be visible.

2. Preliminary ligature of the pyloric, gastro-duodenal, and left gastro-epiploic arteries (not the coronary), division of the gastro-hepatic omentum close to the liver.

3. Division of the duodenum between clamps, and the use, on the distal side, of a suture to close the duodenum by infolding. On the proximal side the exposed mucosa is well seared with the cautery, and a stitch taken round the clamp to prevent it slipping.

4. Ligature of the gastro-hepatic omentum below all glands in the greater curvature. The most important point is now to see that the middle colic artery is not wounded. The omentum is ligatured up to a point just beyond the middle of the greater curvature, so that all glands are removed.

5. The stomach is now turned well over to the left and the coronary artery ligatured at its origin from the coeliac axis. At once the lesser curvature is freed, and the stomach can be pulled lower. In this way all the coronary glands remain with the stomach.

6. Performance of posterior gastro-enterostomy. This is done before the stomach is cut away, being then far easier.

7. Division between clamps of the stomach from the oesophagus at its right margin to a point a little to the left of the middle of the greater curvature.

8. Cauterization of the exposed mucosa of the stomach and closure of the cut end of the stomach by a double suture.

9. Toilet of the peritoneum and closure of the parietal wound.

The size of the growth at or near the pylorus has no influence upon the extent of the resection. For the very smallest growth a resection to this extent is needed. If the growth invades the body of the stomach it may involve the removal of all of the stomach but the isolated area, after the manner described by me several years ago.

References.

[1] British Medical Journal, 1906, i, p. 370. [2] *Annals of Surgery*, 1908 xlvii, p. 889.

A communication which has reached our hands records the aspirations formally expressed at the annual meeting on March 21st of a body entitled l'Association médicale internationale pour aider à la suppression de la Guerre. This, as we have mentioned on a previous occasion, is a peace society, claiming to be both international and medical, and having its head quarters at 25, Rue des Mathurins, Paris. The only "vœu" of a novel character was a hope that the progress of science represented by aëro-navigation will not be turned to the purposes of war.

ON THE SURGICAL TREATMENT OF GASTRIC ULCER, ITS COMPLICATIONS AND SEQUELAE.

With Sixty Illustrative Cases.*

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Of all the advances in modern surgery none is more striking than that which has taken place in the treatment of gastric ulcer. Patients suffering from this disease, or some of its dire results, need no longer drag out the miserable existence they used, for surgery holds out every hope of restoring them to good health. During the last seven years it has been my lot to operate upon 60 cases of gastric ulcer, its complications or sequelae, and it is proposed in the present paper to give some account of them. The various conditions met with have been:

(*a*) Active ulcer of the stomach, with and without adhesions to neighbouring viscera.
(*b*) Cicatrized ulcer, with and without adhesions.
(*c*) Hour-glass contraction of the stomach.
(*d*) Subphrenic abscess.
(*e*) Tumour after perforation of the stomach.
(*f*) Perforating ulcer of the stomach.

The operative procedures adopted for the relief of the above-mentioned conditions may be divided into two main groups, namely, deliberate operations and emergency operations. They will be dealt with in this order.

A.—Deliberate Operations.

The deliberate operations have been:

1 case of ligature of ulcer.
1 case of pyloroplasty.
1 case of excision of ulcer and suture.
2 cases of drainage of subphrenic abscess.
1 laparotomy for tumour after perforation.
34 gastro-enterostomies, alone or combined with other operations.
1 case of gastro-gastrostomy.
1 case of lateral anastomosis.

The case of ligature of ulcer occurred among the earlier operations, and was performed on November 16th, 1901, in a young woman, 21 years of age, in whom an ulcer the size of a sixpence was found on the posterior wall of the stomach, at the extreme cardiac end, close to the lesser curvature. Here the ulcerated surface was invaginated by two layers of Lembert sutures, after which an opening was made in the anterior wall, the invaginated ulcer seized with forceps, pulled up, and a ligature applied beyond the base of the ulcer, the opening in the anterior wall being thereafter closed. The case did remarkably well and remained so for several years, after which she was lost sight of. On account of the awkward situation of the ulcer, the method of treatment mentioned was deemed safer than excision and suture.

In one case of cicatrized ulcer of the pylorus in a female patient, also one of the earlier cases, a pyloroplasty was performed. Here, although distinct improvement followed the operation, the result I am satisfied would have been better had gastro-jejunostomy been done.

In a male patient it was found that an ulcer the size of a two-shilling piece on the anterior wall of the stomach close to the greater curvature had contracted an adhesion to the abdominal wall well down in the left lumbar region. On breaking down the adhesions it was discovered that the ulcer had eaten through the stomach walls completely, its base being formed by the parietal peritoneum. In this case the margin was excised and the gap on the stomach wall sutured. On the completion of this operation, the stomach receded up into the abdomen and lay so naturally that no further operative procedure was deemed necessary. The operation was performed in January, 1905, and I believe the patient has had no further stomach trouble.

Two cases of subphrenic abscess following perforation of a gastric ulcer were met with. The first, a young married woman, was so bad when put upon the operating table that the administration of a general anaesthetic was out of the question, and the drainage, which was by the transpleural route, was under local anaesthesia. Although she caused grave anxiety for a few days, she ultimately recovered

* Read at the November meeting of the Aberdeen Medico-Chirurgical Society.

after a tedious convalescence. The second case is interesting and worth giving in more detail.

Subphrenic Abscess following Perforation of the Stomach: Operation: Rupture of Abscess into Colon: Recovery.

H. R., aged 25, was admitted to the Royal Infirmary on November 9th, 1905. A month previously she began to suffer pain in the left epigastric region. This continued fairly constantly until 1 a.m. on October 22nd, when she awoke with excruciating pain in her left upper abdomen which soon spread all over and was accompanied for a few hours by sickness and vomiting. After a few days, during which the symptoms gradually subsided in severity, she began to progress satisfactorily, but four days previous to admission to hospital her temperature ran up and she again developed general abdominal distress. On admission her temperature was 102.6° F., pulse 128, respirations 28. There was acute tenderness and rigidity in the left epigastric and hypochondriac regions. Four days later this tenderness became less pronounced, but she complained of pain in her left shoulder and arm, extending down to the hand. By and by an area of dullness could be elicited in the left hypochondrium at the site of tenderness, and extending round into the left axilla.

Operation.

On November 18th a longitudinal incision was made over the dull area and deepened until pus was struck. This had an exceedingly offensive odour, was small in quantity, and lay in a cavity bounded behind and below by the stomach and transverse colon, above and in front by the abdominal wall, liver, and diaphragm. A drainage tube was lodged.

Evidently by the time operation was performed, the abscess had almost penetrated the wall of the colon, for, on the following night, about 4 oz. of pus were discharged per anum. The subsequent history is that pus discharged from the tube and at intervals from the rectum until December 17th, when it ceased. The tube track rapidly healed, and the patient made a speedy recovery.

Doubtless in this case Nature alone, unaided by operation, would have effected a cure, although more slowly. In another case, with a history of acute abdominal symptoms grafted on to a chronic stomach trouble, a tumour developed in the umbilical region. On opening the abdomen this was found to be a mass of plastic exudate binding down nearly the whole of the posterior wall of the stomach to the upper surface of the transverse mesocolon. The abdomen was closed, and the tumour mass gradually disappeared. Dyspeptic symptoms developed after her discharge from hospital, I believe, but so far she has not sought relief.

The most gratifying cases have been those in which gastro-jejunostomy has been performed. They were carefully selected, all, with one exception, having definite gastric lesions. These lesions consisted of ulcers unhealed and cicatrized, either non-adherent or having procured attachment to neighbouring viscera. While the vast majority have done exceedingly well, those cases in which the operation was performed for stenosis of the pylorus stand out pre-eminent among the good results. Patients suffering from this distressing sequela of gastric ulcer at once cease vomiting after gastro-jejunostomy, become perfectly comfortable and put on several stones of weight in a surprisingly short time. A typical illustration of the good results of gastro-jejunostomy in pyloric stenosis is the following:

Pyloric Stenosis: Dilatation of Stomach: Posterior Gastro-jejunostomy: Recovery.

J. P., aged 52, a scavenger, was admitted to the Aberdeen Royal Infirmary on June 17th, 1903, with a history of stomach trouble of ten years' duration. Briefly stated his symptoms had been: pain commencing in his lower dorsal region, radiating round his right side to his epigastrium, and vomiting. The quantity of vomited material was sometimes exceedingly large, and not infrequently he observed in it food taken the previous day. Also on occasions the vomitus was either very dark brown or black. All sorts of medical treatment had been tried, and eventually lavage had been carried out with only partial relief. He was a thin, sallow man, weighing 9 st. 3 lb. The evidences of dilatation of the stomach were pronounced, but no tumour could be palpated. The gastric contents contained free HCl.

Operation.

On opening the abdomen (June 20th, 1903), a hard, rounded tumour at least 1½ in. in diameter was found at the pylorus, almost completely obstructing the orifice. There were no enlarged lymph glands. A posterior gastro-jejunostomy was performed. After operation his vomiting ceased, he put on 2 st. in weight in a few weeks' time, and he is now, after a lapse of over five years, pursuing his work in perfect comfort, and asserts that he can "eat anything."

This case also well illustrates the tumour formation often found in gastric ulcer. In old-standing cases the growth is due to fibrous tissue developed during cicatrization, and is permanent, but in recent cases it is to be accounted for to a large extent, in some instances wholly, by oedema, and when this is so, it is remarkable how quickly and completely it disappears after invagination, etc. Doubtless, the cases of so-called malignant tumour which were published as disappearing after laparotomy, were merely instances of inflammatory induration. In the example just given no tumour could be palpated through the abdominal wall. Tumours of the pylorus, in my experience, often escape detection on palpation, and the explanation is that the gastro-hepatic omentum becomes involved in the inflammatory process, or in the cicatrization, so that it is shortened, and the pylorus with its tumour is dragged up under the shelter of the liver and costal arch, and so escapes detection through the abdominal wall.

Ulcerated stomachs are very prone to contract adhesions to adjacent viscera, but exceptionally they go further afield for their attachments, as in the case quoted above, where the cardiac end of the stomach was anchored to the abdominal wall in the left lumbar region. These adhesions are at once the safety and the distress of the patient. But for the timely attachment of the peritoneal covering over the ulcerated area the patient would not seldom be plunged into the disasters of perforation and peritonitis. As it is, while preventing this complication, these adhesions give rise to much pain and interference with the mobility of the stomach, with all its disagreeable consequences. The following are illustrative cases:

Gastric Ulcer adherent to Liver and Diaphragm: Gastrolysis Posterior Gastro-jejunostomy: Recovery.

J. F., aged 23, a domestic servant, was admitted to the Royal Infirmary on June 10th, 1905, with a history of indigestion for seven years. Her symptoms had been epigastric pain, sickness, and vomiting. She was high coloured, fairly well nourished, and complained of great pain in the upper left epigastric region, where also there was distinct resistance, and possibly slight fullness on palpation. No sickness and vomiting took place during the period of observation prior to operation, but her pain was so persistent and so consistently referred to the same spot that it was decided to operate.

Operation.

On opening the abdomen (July 1st, 1905) through the left rectus muscle in the epigastrium, the anterior wall of the stomach opposite the middle of the lesser curvature was found adherent to the under surface of the liver, anterior edge of the diaphragm, and abdominal wall in the left epigastric region, by a dense irregular mass of adhesions. These, which were evidently the result of old ulceration, were severed and a posterior gastro-jejunostomy performed. There was hardly any post-operative sickness, and convalescence was quite smooth. Before leaving hospital she could take ordinary diet and had no pain. When last heard of she had continued well and was able to work.

Gastric Ulcer adherent to Pancreas: Posterior Gastro-jejunostomy: Recovery.

J. C., a cattleman, aged 58, was sent to the Aberdeen Royal Infirmary on November 14th, 1905, suffering from what was believed to be malignant disease of the stomach. Ten years previously he had had an attack of dyspepsia lasting six weeks. He continued well after this illness until March, 1905, when again he began to suffer from epigastric pain, at first continuously, but later with daily periods of remission. There was no vomiting, and the taking of food did not intensify his pain. On several occasions he noticed melaena. After having been confined to bed for four or five weeks he recovered, and was well again until September 17th following, when he had an attack of pain and vomited a quantity of blood. After that he was never quite free from pain, but vomiting was infrequent. He was very thin, weighing 9 st., and markedly cachectic looking. He referred his pain to the epigastric region, where there was distinct tenderness, especially over the right half and at the umbilicus. No tumour could be felt, and the other abdominal organs appeared normal. The gastric contents showed a trace of free HCl.

Operation

On November 18th, 1905, the abdomen was opened through the right rectus muscle, and on the posterior wall of the stomach, rather nearer the cardiac end and about 2 in. from the lesser curvature, was an ulcer about the size of a shilling with indurated margins. The ulcer and adjacent walls of the stomach had procured a tight adhesion to the pancreas, but below there was sufficient room to perform a gastro-jejunostomy, which was accordingly done. There was little post-operative vomiting, and convalescence was smooth. The patient left hospital on December 29th, 1905, feeling very well, and put on flesh every week for some time afterwards. He has, I understand, remained well.

Gastric Ulcer adherent to Abdominal Wall and Costal Arch: Gastrolysis: Posterior Gastro-jejunostomy: Recovery.

Mrs. J. G., aged 48, who was admitted to the Aberdeen Royal Infirmary on August 1st, 1907, had had good health until two

years previously, since which time she had suffered at frequent intervals from discomfort and pain in the epigastrium, culminating in sickness and vomiting, half an hour after meals. The vomitus consisted of the food taken at the previous meal, but occasionally she brought up dark-brown material. There was no distinct history of melaena. For six weeks prior to admission all her symptoms had become aggravated, and she had lost flesh considerably. She was thin and pale, and complained of pain in the left epigastric and hypochondriac regions. There was distinct resistance in the regions mentioned, and on deep inspiration an ill-defined rounded mass could be felt. The vomit contained abundant HCl.

Operation.

On August 3rd, 1907, the epigastrium was opened through the left rectus, and the stomach found anchored by a broad mass of adhesions extending from the anterior wall at the cardiac end near the lesser curvature to the left costal margin and adjacent wall of the abdomen. A posterior gastro-jejunostomy was performed, after which the adhesions were severed from the costal arch and abdominal wall. These were found to surround a funnel-shaped cavity leading down into the stomach, and were evidently the result of active ulceration. The fibrous structures and the ulcerated edges of the gap in the stomach were clipped away, after which the organ was closed by two layers of suture. There was very little post-operative vomiting, and her progress towards complete recovery was quite smooth. She left the hospital on August 30th, 1907, and up to the time of writing has been quite well.

Other examples of cases with gastric adhesions, as well as with simple ulceration at the pyloric end of the stomach, might be quoted, but the above may be taken as typical of what is often found and the relief experienced after operation.

Two cases of hour-glass contraction of the stomach have been operated upon.

The first occurred in a female patient, aged 31, in whom the symptoms of pain and vomiting had been so frequent and distressing for a number of years as to render her quite unfit to work for most of the time. At the operation the stomach was found divided into two pouches—a small pyloric and a large cardiac. As it was quite apparent that stagnation was taking place in the cardiac pouch it was decided that an anastomosis between it and the jejunum would best meet the necessities of the case. This was accordingly done, and has been followed by a completely successful result, for the patient has not had the slightest trouble since operation, which was done two years ago, has put on weight, and looks a different person.

In the other case I regret having to record a fatal result from haemorrhage on the sixth day after operation. Here the patient was 63 years of age, much reduced by pain and vomiting, which had troubled her for years. On opening her abdomen the stomach was found constricted by dense cicatrization, dividing it into two pouches about the same size. The pylorus seemed free. A gastro-gastrostomy was performed, an ample opening being provided. She did well until the sixth day, when she showed signs of severe internal haemorrhage, rapidly sank, and died. *Post-mortem* examination showed the constriction to have been due to old ulceration, leaving a passage between the two pouches just sufficient to admit an ordinary lead pencil. The haemorrhage was found to have come from a non-malignant ulcer on the posterior wall of the cardiac pouch, close to the lesser curvature, about an inch from the constriction. The anastomosis was found quite tight, with no sign of leakage or peritonitis.

Remarks on Results and Treatment.

No more gratifying results are to be obtained in surgery than those which follow gastro-jejunostomy in properly selected cases; but it seems to be all too true that it is an operative procedure which has been much "overworked." To perform this operation on neurotic patients with vague and indefinite gastric symptoms is calculated to bring discredit on surgery, for instead of being productive of benefit it may, on the contrary, graft very real and serious disability on to what was mainly an imaginary trouble. Further, the more recent developments of gastric surgery show that gastro-jejunostomy must not be looked upon as a universal panacea for all benign lesions of the stomach, better results being got from other operative procedures according as the lesion is at or near the pylorus, and so obstructing the passage of food, or further away towards the cardiac end. In malignant disease of the stomach also, gastro-jejunostomy has a very doubtful place, unless combined with the radical operation of excision. It is, however, by no means always an easy matter to decide between a benign and malignant lesion, but the presence or absence of free HCl in the vomitus, although not entirely reliable, has been found decidedly helpful. As regards the result of the 42 deliberate operations, all have been exceedingly satisfactory except 5. Of these 5, 3 died, 2 from haemorrhage after operation, and 1 from regurgitant vomiting. One of the cases of haemorrhage is quoted above, and occurred after gastro-gastrostomy for an hour-glass stomach; the other took place in the case of a woman, 63 years of age, on the sixth day after a posterior gastro-jejunostomy for extensive ulceration of the posterior wall of the stomach, the base of the ulcer being formed by the pancreas. The pathological report was to the effect that the ulceration was non-malignant. The interest of these two cases lies mainly in the fact that fatal haemorrhage from a benign ulcer may follow operative interference even though the anastomotic openings are ample, as they certainly were in these cases, and although no mechanical appliance is employed. The death from regurgitant vomiting occurred on the eleventh day after posterior gastro-jejunostomy. Here the mesenteric side of the jejunum had become adherent to the opening in the stomach, dividing it into two, a small efferent and a large afferent opening. Thus kinking had occurred, and once more goes to prove that regurgitant vomiting is due to a mechanical obstruction at the efferent opening. In this connexion another case which came under my care in 1902 on account of regurgitant vomiting may be mentioned.

He had had an anterior gastro-jejunostomy performed in 1897 for a stenosis of the pylorus, but had been much troubled with vomiting of bilious material since the operation. His vomiting generally took place from half to three quarters of an hour after food. I found that the proximal loop was short, and ascended to the stomach almost vertically, while the distal loop likewise left the anastomosis, which by the way was quite large, in a vertical direction. A lateral anastomosis between the loops was performed, and for several months he did well. The vomiting again returned, however, and he seemed to be almost as bad as ever. Curiously enough, after persisting for a considerable period it ceased, and he has remained well for several years.

In another case, of a woman aged 27, who for eleven years had suffered from pain, sickness, and vomiting, and in whom a puckered pylorus with dilatation of the stomach was found, a posterior gastro-jejunostomy was done. The vomiting still goes on, but the pain she suffered from is relieved.

Lastly, at the urgent request of a highly neurotic patient with some dilatation of the stomach and complaint of "heavy feeling" after meals and who had been advised by an eminent physician to have a gastro-jejunostomy performed for his trouble, I did the operation. No definite lesion to account for the dilatation could be found, and the procedure, although it did not aggravate the neurosis, led to no improvement.

With one exception all the gastro-jejunostomies have been posterior. In none of these was a proximal loop left, but in the earlier cases the jejunum was not drawn quite so tightly towards its anastomosis. The site selected in the stomach has been always the most dependent part and as close to the greater curvature as possible. As the greater curvature of the stomach at its most dependent part runs often quite horizontal for a short distance, the part of this horizontal portion nearest the duodeno-jejunal junction—that is, towards the left, has been selected. This permits the anastomosed jejunum to maintain its natural direction—namely, vertically, or almost vertically, downwards. Moreover, mutual dragging, and therefore possible kinking, is obviated. Where the distal portion of the intestine after anastomosis seemed to turn more to one side than another, a supporting suture was always inserted so as to preserve this direction, also with the same object in view, that of avoiding kinking. Such supporting sutures seem to me to be essential when the anterior operation is performed. It is important also during the suturing not to embrace too much of the jejunal wall, otherwise the bowel is apt to become flattened against the opening in the stomach and the occurrence of vicious circle favoured.

B.—EMERGENCY OPERATIONS.

There are few intra-abdominal emergencies that appear with more startling suddenness than perforation of the stomach. It hurls its victim with a tragic swiftness from comparatively good health into a position of the greatest peril. Nor is its guise always certain, for although in the majority of cases it produces a clinical picture once seen never to be forgotten, in a certain number it simulates other abdominal disasters. The death roll from perforation must be enormous. Although Mikulicz was the first to suture a ruptured ulcer in 1880, it was not till 1892 that the operation was accomplished successfully by Kriege. Once the closing of a perforation was demonstrated to be a feasible procedure, many cases have been operated upon and many successful results published. In order to arrive at an estimate of the mortality after suture of perforated

ulcer, several investigators have collected large numbers of published cases, and drawn conclusions therefrom. But it is more than doubtful if these conclusions are to be relied upon, for the tendency has been to publish successful cases, while many unsuccessful ones are not heard of. The percentage of recoveries, therefore, in these collected cases is almost certainly too high. My own experience extends in all to 18 cases, which are appended in tabular form. The first occurred in March, 1902, and the eighteenth in March, 1908. They are given in chronological order.

Table of Operations for Perforation of the Stomach.

	Sex.	Age.	Duration.	Situation.	Result.
1	F.	17	18 hours	Prepyloric	D.
2	M.	45	28 ,,	Prepyloric	D.
3	F.	19	4 ,,	Cardiac*	R.
4	M.	33	30 ,,	Middle	D.
5	F.	28	9 ,,	Prepyloric	D.
6	M.	28	20 ,,	Prepyloric	D.
7	F.	19	23 ,,	Middle	D.
8	F.	39	8 ,,	Cardiac	R.
9	F.	46	3 ,,	Prepyloric	D.
10	F.	24	12 ,,	Cardiac	D.
11	F.	19	29 ,,	Prepyloric	R.
12	M.	28	12 ,,	Prepyloric	R.
13	.	24	8 ,,	Prepyloric	R.
14	F.	29	22 ,,	Prepyloric	D.
15	F.	25	20½ ,,	Pyloric	R.
16	F.	24	3½ ,,	Prepyloric	R.
17	M.	30	5 ,,	Pyloric	R.
18	F.	21	5 ,,	Pyloric	R.

* Posterior wall.

The percentage of recoveries among all cases works out at 50 per cent. exactly. If, however, they are divided into two groups—namely, those operated upon twelve hours or less after perforation and those over that time, the percentage of recoveries in the former is 70 per cent. and in the latter 25 per cent. Then, again, it will be observed that among the first 9 cases only 2 recovered, while among the second 9 cases 7 recovered. This is to be accounted for in various ways. In the first place, the average duration of the perforation in the first 9 cases is greater than in the second 9, and there has been a very distinct and steady improvement in the type of case sent for operation, especially latterly, as the advantages of early interference are becoming more and more recognized. A greater share of the credit in the reduction of the mortality must be given, I believe, to the improved technique which has been employed during the last few years in dealing with the acute abdomen. Rapid operating followed by the Fowler position and proctoclysis have done wonders in acute abdomens of all types.

Of the 18 cases, 14 were 30 years of age or under. Among the males the average age is 30, while among the females it is somewhat lower—namely, 26. Then, again, the proportion of females to males is 13 to 5, bearing out the well-known proneness of young females to acute ulcer of the stomach.

All the perforations with one exception were situated on the anterior wall of the stomach. No less than 10 of these were prepyloric, generally about 2 in. from the pylorus and midway between the two curvatures, while other 3 were actually on the pylorus itself. Of the remaining 5, 2 were on the middle of the organ and 3 at the cardiac end, the perforation on the posterior wall being among the latter.

Except in Case No. 1, in which the perforation was ragged and irregular, all the ruptures have presented the characteristic clean-cut, punched-out appearance, and have varied in size from the head of a pin to a large split pea. Round the opening a variable amount of induration has been the rule, with friability of the tissues—a friability which increases with the duration of the perforation. In one or two an ineffectual attempt to wall off the rupture by adhesions has been observed.

Symptoms, Diagnosis, and Treatment.

A study of the symptoms of these 18 cases brings out many points of interest. First of all, as regards previous history, 17 had had chronic indigestion, the symptoms of which, however, were not always characteristic of ulcer. Only occasionally did one get a definite history of haematemesis. In 8 there was distinct aggravation of the pain prior to rupture. This period of aggravation varied in duration from three weeks to one hour, the average being about twenty-four hours. In one or two cases the symptoms seemed to have been entirely in abeyance, the patients apparently being in perfect health when perforation occurred. In Case No. 17 no chronic history of indigestion was present at all. His case is as follows:

Perforation of Gastric Ulcer: Operation Five Hours Afterwards: Recovery.

G. G., aged 30, a carter, had had absolutely no illness until January 12th, 1908, when he began to suffer from abdominal pain in the epigastric and right iliac regions. For three days this continued, and rendered him unfit to work, but it then subsided, and he resumed his occupation. Two days later, at 10 p.m., the pain recurred suddenly, and with such intensity as to case him to roll about and groan with agony. The pain was felt sometimes in the epigastrium, sometimes over the area of the appendix. He was sent to the Aberdeen Royal Infirmary. When seen there, he lay on his back with his knees drawn up, and cried out with pain. His temperature was 96.4° F., pulse 80. Respirations 36, shallow and thoracic in type, the abdomen being quite still. The rigidity of the abdominal muscles was general, but most pronounced over the right half of the abdomen. Acute tenderness was present both in the right epigastric and iliac regions, more particularly the latter. The liver dullness was present and the flanks were resonant.

Operation.

Five hours after perforation the abdomen was opened over the appendix, and a quantity of thin, inodorous purulent material escaped, but the appendix itself seemed perfectly normal. The stomach was then explored through a central epigastric incision, and a quantity of gas and fluid escaped. A round, punched-out-like perforation, the size of a split pea, was easily found, situated exactly over the anterior aspect of the pylorus. This was invaginated, and closed by two layers of Lembert suture. A Keith's drain was lodged in the pelvis through a suprapubic incision, and then the abdomen flushed from the upper wound downwards, the saline solution carrying the purulent fluid with particles of food out at the Keith drain. He was propped up into the semi-sitting posture in bed, and his convalescence never caused anxiety.

The entire absence of gastric symptoms until five days before perforation in this case is certainly remarkable, more especially considering the situation of the ulcer. It is difficult to believe that the ulceration had not existed for some time in spite of the entire absence of symptoms.

The pain of a ruptured ulcer, as one would expect, is referred most often to the epigastrium. In 8 of my cases it was confined to this region, while in 5 others it radiated, in addition to (*a*) the lower part of the sternum and ribs, (*b*) between the scapulae, (*c*) the lower costal margin, (*d*) and (*e*) appendical area. In 5 cases pain was complained of away from the epigastrium, being referred to (*a*) the lower abdomen, back, and shoulders, (*b*) umbilical region, (*c*) appendical area, left shoulder, and arm, (*d*) and (*e*) appendical area. Thus it will be observed that in 5 out of the 18 cases the area of the appendix was implicated either in conjunction with other regions or alone. When the upper abdomen and the appendical region were both involved, it was found on careful inquiry that the pain began above first and then gravitated downwards to the right. The explanation which has been put forward of this is probably the correct one—namely, that when rupture takes place the extravasation is at first confined to the site of the perforation, and pain is referred there; but in the course of an hour or two, guided by the colon, the stomach contents, etc., track downwards to the right iliac fossa, carrying infection and inflammation to the peritoneum of that neighbourhood, with attendant pain. Why the pain of a perforation should from the beginning be referred to the right iliac region, as it was in 2 of my cases, is difficult to understand. In the following case (No. 5) the pain both prior to and after rupture was referred to this part of the abdomen.

Perforation of Gastric Ulcer: Operation Nine Hours Afterwards: Death on the Fourteenth Day from Pneumonia.

Mrs. K. E., aged 28, with a very indefinite history of several attacks of indigestion consisting of epigastric pain occurring about two hours after food, and accompanied by vomiting, but no haematemesis, was seized on November 29th, 1903, with pain over the region of the appendix. This pain remained of moderate severity until 2 p.m. on December 2nd, when suddenly it became intense, and she had to take to bed. Soon the pain radiated from the right iliac fossa over the rest of the abdomen, and she vomited several times, but no blood was observed in the vomitus. When admitted to the infirmary she looked pale and collapsed, her pulse was 128, temperature 98.4, respirations 36. There was general abdominal rigidity and tenderness, but the latter was most pronounced in the right iliac region.

Operation.

Nine hours after the sudden aggravation of the pain, the abdomen was opened over the appendix, and immediately there escaped a quantity of thin purulent fluid. The caecum and appendix were red and congested, and had small patches of exudate upon them. The appendix was rapidly removed, but it became evident on closer examination that it was not the offending organ—a conclusion confirmed by the inodorous nature of the pus. Immediate incision was therefore made in the epigastrium, and at once a circular punched-out-like perforation, about $\frac{1}{16}$ in. in diameter, revealed itself on the anterior wall of the stomach near the pylorus, and equidistant from the greater and lesser curvatures. The area around the opening was cleansed and invaginated by two layers of Lembert suture. The abdomen was flushed, and then closed with drainage. Although the respirations continued fast she did well until December 7th, when signs of pneumonia developed over the left base. From this complication she never recovered, and died on December 16th, fourteen days after operation.

Vomiting, never a marked feature after perforation, was absent altogether in about a third of my cases. When it does occur, the presence of very minute particles of blood clot may occasionally be detected on minute inspection of the vomitus.

It is too widely believed that absence of the liver dullness is an early symptom of perforation. This is not so, for in every one of the above cases which was sent for operation before the rigidity of the abdominal muscles had begun to pass off liver dullness was found. In some it was diminished, while in others it was unaltered. So long as this protective muscular rigidity lasts, in some cases for many hours, the extravasation of air is more or less held in check, and the liver dullness is not obliterated. Later, with the spreading peritonitis, muscular relaxation, and commencing distension, the dullness vanishes, a sign that Nature is losing its power of resistance, and the patient is passing into the final stage of the disease.

Another point that perforative peritonitis teaches, and that is that a certain amount of fluid in the abdominal cavity is compatible with resonant flanks. Completely dull flanks, like the absence of liver dullness, is a sign of advanced peritonitis. In the earlier stages the fluid in the peritoneal cavity, moderate in amount and limited as it often is by adhesive peritonitis, fails to reach the flanks, or does so only to a small extent, and consequently the colon resonance is not interfered with or only slightly diminished.

The only disease with which perforation of the stomach was confounded in my cases was appendicitis. In 4 the appendix was explored in the first instance. In 2 of these, from the fact that the pain and tenderness were most acute over that region, a diagnosis of appendicitis was made, while in the other 2 it was found impossible prior to operation to differentiate between a rupture of the stomach and a perforated appendix. In arriving at a conclusion, too much stress cannot be laid upon the previous history. A chronic history of ill-defined dyspeptic symptoms preceding an acute abdominal crisis should always lead one to suspect the rupture of an ulcer. Then, again, I believe the pain of a perforation is more agonizing than that of a ruptured appendix. When pain is referred by the patient equally to the epigastrium and right iliac region, a good guide to the site of the lesion is, which of the two regions is the more tender. When the diagnosis is uncertain and the abdomen is opened over the appendix the odour of the purulent fluid is, I believe, of great diagnostic value. The appendix may share the general peritonitis and show patches of septic exudate and it may occasionally be difficult to decide from its appearance whether it is diseased or not, but if the pus is inodorous the stomach ought at once to be explored. The offensive odour of the pus in a case of ruptured appendix is rarely absent, while in rupture of the stomach there is little or no odour.

As in all other acute abdominal cases, the earlier operation is undertaken the better the prognosis. This is well borne out in the table given, the mortality among those got within the first twelve hours being much less than among those got at a later period. But while the duration of the perforation is of chief importance, there are other considerations which have a bearing on the prognosis, namely, the amount and character of the food in the stomach at the time of rupture, the size of the perforation, the extent of the extravasation, and last, but by no means to be neglected, the resistance of the patient. As showing how the amount of extravasation may be limited, the following case may be quoted:

Perforation of Gastric Ulcer: Operation Eight Hours Afterwards: Recovery.

J. M., aged 24, a domestic servant, had for several years suffered from anaemia and frequent attacks of pain and vomiting about an hour after meals. She had never had haematemesis. For twenty-four hours prior to perforation she had more epigastric pain than usual, but it varied in severity until 1 p.m. on March 26th, 1906, when it became suddenly very intense and she had to go to bed. The pain now radiated through to the lower dorsal region and up to the left shoulder, and was accompanied by vomiting of a light brown material. Her physician ordered her to hospital, where her condition was found as follows: General appearance good, temperature 101 F., pulse fair in quality, 106, respirations 30. She complained of pain in the left epigastric and lower dorsal regions and over her left shoulder; abdominal respiration absent. Tenderness in the left epigastrium was most pronounced, and there was cutaneous hyperaesthesia in Head's triangle. The abdominal muscles were very rigid, especially the recti at their upper part. Percussion note all over the abdomen, including the flanks, was clear, and the liver dullness was not diminished.

Operation.

At 9.20 p.m. on March 26th, 1906, eight hours after perforation, the abdomen was opened in the epigastrium through the left rectus muscle; a small quantity of turbid fluid escaped, and on exploring the stomach a perforation was revealed on the anterior wall, 1 in. from the lesser curvature and 2 in. from the pylorus. This perforation was almost occluded by a small finger-like process from the gastro-hepatic omentum and by a partial recent adhesion of the ulcerated area to the diaphragm and edge of the liver, so that an opening only the size of a pin-head was left uncovered. On separating the light adhesions and lifting off the finger of omentum the full extent of the perforation became evident. It measured $\frac{3}{16}$ in. in length by $\frac{1}{4}$ in. broad, and its edges were clean cut. Round this opening was a small quantity of turbid fluid. After the surrounding area had been wiped clean, the ulcer, which was about the size of a shilling, with indurated edges, was invaginated by two rows of Lembert suture. The anterior surface of the stomach and upper surface of the transverse colon were wiped with normal saline solution, and, as the rest of the abdominal cavity was apparently uncontaminated, the abdominal wound was closed without drainage. The patient made a completely smooth recovery, and was discharged well on April 23rd, 1906.

But for the purposeful-like action of the finger of omentum and the limiting adhesions of the ulcerated surface, this patient's condition would have been much worse. Later complications also may vitiate results which are immediately successful. Of the 10 cases which were operated upon twelve hours or less after operation, 3 died. These 3 recovered from the immediate effects of the operation, dying later of complications; Case No. 5, which is given in detail above, succumbed fourteen days afterwards to pneumonia, Case No. 9 twenty-seven days later to acute mental symptoms, Case No. 10 nine weeks later to pyaemia.

The treatment of perforation of the stomach resolves itself into the treatment of the peritonitis after removing its cause. The closure of the rupture can be effected either by two rows of Lembert suture or a purse-string overlapped by a Lembert suture. It is safer, I believe, to employ two layers of sutures, especially in late cases, where the affected area is oedematous and friable, and sutures are exceedingly apt to tear through. As a rule, it is not a difficult matter to find a perforation, but occasionally, as the following case shows, it is an impossibility, and then other methods of treatment must be resorted to.

Perforation of Gastric Ulcer: Operation Twenty-nine Hours Afterwards: Gastro-cutaneous Fistula: Recovery.

G. C., aged 19, a domestic servant, had a history of pain or discomfort after meals for an indefinite period. In May, 1905, she had an attack of rather severe abdominal pain, which incapacitated her for work, and one milder attack a little later. On November 23rd, 1905, at 4 p.m., she felt sick and vomited, and immediately afterwards was seized with very intense

abdominal pain in her right iliac region, left shoulder and arm. This pain diminished after a couple of hours but later again increased in severity. Pain remained agonizing during the night and extended from the right iliac fossa all over the abdomen. No vomiting occurred after the onset of severe pain. She was admitted to hospital at 8 p.m. on November 24th, 1905, when her condition was as follows: Temperature 98.8°, pulse 120, respirations 38. Her appearance was good; she complained of general abdominal pain but most severe about the umbilicus. Abdominal respiration was fair over the upper half which was also somewhat retracted, less marked over the lower half which was rather distended. Abdominal tenderness was general, but most pronounced just above the umbilicus. The liver dullness was normal.

Operation.

In view of the pain having been first felt in the right iliac fossa, the abdomen was opened, twenty-nine hours after the commencement of the acute illness, over the appendix. This appeared normal. Immediate epigastric incision was then made and the anterior wall of the stomach was found drawn up and adherent to the under surface of the liver by patches of recent yellow exudate through the interstices of which was escaping turbid fluid containing numerous food particles. These adhesions were broken down and a search instituted for the perforation, but it completely defied detection. The turbid fluid came welling up from the pyloric end of the stomach, and this, combined with the patches of lymph on the stomach wall, so effectually obscured the field that the search, which could not be prolonged on account of the fact that the patient's pulse and general condition were rapidly running downhill, had to be abandoned. The whole area of the stomach affected was therefore packed over with sterile gauze, the end of which was brought out at the upper angle of the abdominal wound. This was then closed after the peritoneal cavity, the soiling of which was partial, had been wiped clean.

For the first three days the dressings had to be frequently changed, on account of a greenish soakage. At the end of this time, under an anaesthetic, the gauze tampon over the stomach was removed with difficulty. No sooner had the last of it left the wound than 6 to 8 oz. of bile-stained fluid, containing small masses of curdled milk and glairy mucus, escaped. No subsequent plugging was used, and for an hour and a half after removal of the tampon she complained of pain in the left shoulder. At first the soakage from the wound was considerable, but the abdomen remained perfectly quiet, and she soon expressed herself as comfortable. For six days she was fed per rectum, but after this minute quantities of milk and water were administered by the mouth and gradually increased. Some of the curdled milk appeared at intervals in the discharge from the epigastric fistula, but gradually the quantity diminished, and discharge ceased on December 15th, three weeks after operation. She was dismissed, able to take ordinary diet, on February 2nd, 1906.

In dealing with the resulting peritonitis my earlier practice in perforation cases was to flush the abdomen regularly; but latterly this procedure has been abandoned, wiping alone being employed, except in widespread soiling. In extensive extravasation where fluid and food particles have got well below the transverse colon, then flushing with sterile salt solution is still employed in the following manner: A stab wound is made above the pubes and a Keith's drain lodged in Douglas's pouch. The sterilized end of the rubber tube from the irrigator, the glass nozzle having been previously detached, is then, guided by the hand, introduced through the epigastric incision into the abdominal cavity, which is then flushed from above downwards, the fluid emerging through the Keith's drain. This is carried out, the flexible tube being moved about to special pockets, until the fluid from the drain comes away clear, after which the epigastric incision is closed, with or without drainage according to circumstances. It is of paramount importance that the irrigating fluid should be of a proper temperature, otherwise shock will certainly be induced. The Fowler position and proctoclysis have so revolutionized the outlook in the acute abdomen, and have met with such wide acceptance, that no further comment need be made on this excellent method of after-treatment.

The routine performance of gastro-jejunostomy, at the same time as the perforation is dealt with, has been recently advocated with plausible but by no means convincing arguments. The aim of operation on a perforation is to avert death, and I feel convinced that the additional time necessary to make the short circuit will turn the scale against many cases requiring every particle of strength to stand even a short operation. The more rapidly the perforation and peritonitis can be dealt with compatible with efficiency the better the chance of recovery; and to lay it down that the performance of gastro-jejunostomy is an essential part of the treatment of a perforation seems to me fraught with the greatest danger. True, in certain early cases, gastro-jejunostomy may be added to the operative treatment with safety and advantage, but it should be employed with the greatest discretion. An operation which is theoretically ideal and academic may be far from a life-saving one. Moreover, it seems now clear that gastro-jejunostomy should not be performed as a matter of routine even as a secondary operation, but should be reserved for those cases in which the perforation is so situated that its closure leads to pyloric obstruction or marked interference with the motor function of the stomach. That invagination and suture may lead to the disappearance of an ulcer is corroborated by Case No. 10, which died nine weeks after operation of pyaemia. At the *post-mortem* examination the pathologist could discover no trace whatever of the ulcer. So far two cases have come back with gastric symptoms after operation for perforation. In both the perforation was pyloric, and both have been relieved by gastro-jejunostomy.

In some of the cases recorded the patient was almost moribund when put on the table; but there ought never to be any question as to the propriety of operation—no matter how remote the chances of a successful result are, the patient ought to have the chance, for without operation the outcome is certain.

INTUSSUSCEPTION CONTAINING A SARCOMA OF THE INTESTINAL WALL: ENTEROECTOMY: RECOVERY.

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THE following case presents some features so rare and interesting that we venture to consider the notes worth publishing:

History.

E. S., a boy aged 4½ years, was first seen at 9 p.m. on November 14th, 1908, when suffering from acute abdominal pain of a spasmodic character; between the spasms there seemed to be absolute freedom from pain—there was no vomiting, and nothing was to be felt in the abdomen; the attack lasted until 8 a.m. on November 15th. He was thin, pale and delicate-looking, and there was a previous history of abdominal pain and vomiting for two months, but otherwise he was quite well up to the time of this sudden attack.

On November 16th he was running about quite well.

On November 18th he had a similar attack, pain at intervals all day, vomiting frequently. Temperature, 100° F., pulse, 120. Nothing was felt in the abdomen. On November 19th the attacks of pain and vomiting continued; the temperature was normal, the bowels constipated. No blood, but a little mucus was passed with hard faeces without straining. Retraction of both testicles was marked throughout the attack.

From November 20th to November 23rd the patient was much better, having pain only at times; vomiting had ceased.

On November 23rd a lump was felt for the first time to the right of the umbilicus; the following day he was better and no lump could be felt.

On November 28th, at 5 a.m., he had another severe attack of pain with vomiting which was more or less continuous; for the first time he showed signs of being seriously ill; he was pale with anxious expression, tongue and lips dry, pulse rapid and feeble; examination of the abdomen was difficult, and the right rectus abdominis muscle was very resistant; the pulse was 132, and the temperature 98.4°; a small constipated motion was passed during the day. The pain was very acute and of a spasmodic character, the boy being literally doubled up with it. As the result of a surgical consultation an exploratory operation was performed.

Under A.C.E. a well-marked sausage-shaped mass was felt to the right of the umbilicus, freely movable, well defined, of doughy consistence, and just above and to the median side was another smaller mass.

Operation.

On opening the abdomen through the right rectus abdominis muscle a congested enteric intussusception was found, about 4 in. or 5 in. in length, with a tightly constricted neck, close to which a mass of enlarged mesenteric lymphatic glands was present. As reduction was impossible, and the patient's condition extremely grave, the whole of the intussuscepted gut was resected as rapidly as possible, one of the mesenteric glands removed, and a speedy end-to-end anastomosis of the divided ends of the gut by suture was performed. The abdomen was then filled with hot saline lotion and closed by through-and-through silkworm gut sutures.

After-history.

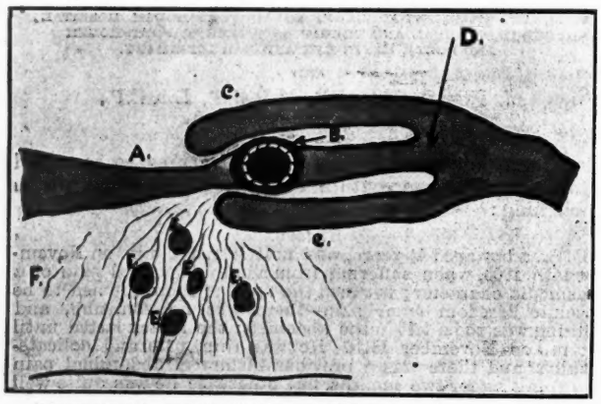
The patient rallied well from the operation, repeated saline injections into the bowel being administered. There was an action of the bowels on November 29th, at 10 a.m., after injection, and the pain was greatly diminished. The temperature rose to 102° F. shortly after the operation; the pulse remained at or about 130. The tongue was for several days dry and red, and the patient continued very restless and irritable, and slept badly. There was no further vomiting. Small quantities of milk and water were administered by the mouth after the second day, and gradually the unfavourable symptoms subsided. On December 6th alternate stitches were removed, and on December 7th, as he continued restless and crying for his friends, he was allowed to go home. After that his progress was uninterrupted.

Description of Parts Removed.

On examination of the specimen, the neck of the intussusception was found to be very tightly constricted, the cause being a puckered indurated growth, rather larger than a shilling, situated laterally in the wall of the small intestine just beyond the neck of the intussusception, effectually preventing any attempt at reduction. The total length of the gut resected was about 18 in. when unravelled.

On microscopical examination the growth proved to be (according to the report of the Clinical Research Association) a large round-celled sarcoma. The report reads as follows: "The mass is a malignant new growth invading the muscle coat of the intestine. It is composed of large round cells in a delicate stroma with very thin-walled vessels. We conclude that it is a round-celled sarcoma."

The mesenteric lymphatic glands were too deeply placed to remove *in toto*, considering the serious condition of the patient, which precluded any lengthy operative procedures. Added to this they had all the appearances of being tuberculous, and malignancy was unsuspected; nor was the



Diagrammatic representation of intussusception and growth. A, Neck of intussusceptum; B, growth in wall of intussusceptum; C, intussuscipiens; D, apex of intussusceptum; E, enlarged mesenteric lymphatic glands; F, mesentery.

growth discovered until subsequent examination of the resected intussusception; this alone prevented easy reduction, as the condition of the gut wall was merely that of congestion.

The patient is at the present time in fairly good health, though a resistance can be felt in the situation of the mesenteric glands, and his recovery has not been quite as perfect as one would expect in an ordinary case. His digestive functions remain good, but the ultimate prognosis one must consider very grave.

A NOTE UPON THE EMBRYOLOGICAL AND PATHOLOGICAL SIGNIFICANCE OF CERTAIN FOLDS IN THE ANAL CANAL.

BY J. BERNARD DAWSON, M.B., B.S., F.R.C.S.,

YORK.

IN a recent paper Dr. Arthur Keith, discussing the development of the proctodaeum, stated that—

> In two cases, both females, the epithelium of the proctodaeum had budded out irregularly, so as to form diverticula, some of which projected for some distance into the perineal tissue, and undoubtedly correspond to certain diverticula which are found in the anal canal opening under the folds which join together the upper ends of the columns of Morgagni.

He is good enough to attribute to me the credit of pointing out these said diverticula.[1] I, however, have to thank Mr. F. C. Wallis, of Charing Cross Hospital, for having directed my attention to the existence of these strange test-tube-like projections.[2] He attributes certain cases of rectal discomfort to the fact that these valvular folds uniting the upper end of the columns of Morgagni and the diverticula become inflamed and painful, the sinus doubtless acting as an efficient culture chamber for micro-organisms.

Mr. Keith was good enough to permit me to carry out some research work upon the subject in his laboratory.

Morgagni's original description of the anal canal gave little or no help. The most complete description of the anal canal is to be found in *Traité d'Anatomie Humaine* of Jonnesco and Charpey. Of the columns of Morgagni they say:

> They have a triangular base below, which inclines to either side and is continued into the free border of the valves of Morgagni. The summit tapers off, and is lost in the rectal mucous membrane.

There is, therefore, no mention of any folds uniting the summit of the columns.

My work, under Mr. Keith's supervision, consisted of cutting sagittal sections through the pelves of some six fetuses of ages varying from 2 months to full time. Without exception, in every specimen the columns of Morgagni were united by folds of mucous membrane both above and below. In other words, the anal canal was surrounded by a series of depressions which were bounded above and below by valve-like flaps of mucosa and on either side by elevated ridges, which were the columns of Morgagni. One series of sections from a hydrocephalic female fetus of 6 months seemed to offer some clue to the solution of the problem. In this I was fortunate enough to find a distinct

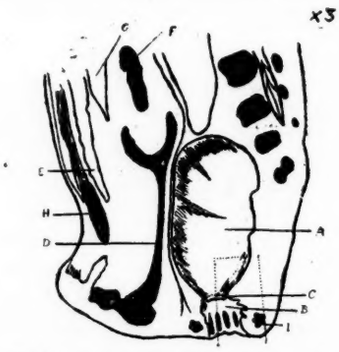


Fig. 1.—A, Rectum; B, anal canal; C, remnant of proctodaeal membranes; D, vagina; E, bladder; F, cavity of uterus; G, peritoneum; H, os pubis; J, ext. sphincter. Dotted lines indicate portion from which sections were cut.

remnant of the proctodaeal membrane; 6 mm. from the skin margin was a perforate septum across the lumen of the anal canal forming a circular shelf, of varying width, around the bowel; it was clearly an imperfect proctodaeal membrane, which had persisted in a fetus that, save for the hydrocephaly, was perfect.

Had the septum been complete the condition would have been one of imperforate anus, in which the rectum ended blindly at the site of a fully-developed proctodaeum.

Below this imperfect rectal septum the anal canal was perfect, the columns and lower valves of Morgagni being well developed, the upper ends of the columns, however, disappearing under the membranous remnant. On microscopical examination it was seen that above the mucosa of the rectum was of the usual type, below the stratified epithelium of the anal canal is found. The septal shelf itself had different coverings above and below—the upper or rectal surface being clothed with the usual columnar rectal mucous membrane, exhibiting crypts and goblet cells, whilst the under or anal surface was covered with stratified epithelium. Between these two epithelia was fibrous tissue with a few muscular fibres, but no definite offspring from the regular muscle coats of the rectum. The circular muscular fibres of the rectum were aggregated to form the internal sphincter exactly at the level of the imperfect septum; below the circular muscular coat was continued, between the external sphincter and the anal submucosa, to the skin margin.

This fact is not easy to explain, for it is not easy to see why the internal muscular coat, a derivative of the splanchnic layer of the mesoblast, should come to occupy a position between epiblastic epithelium and the external

sphincter which is derived from the somatic layers of mesoblast. This downward continuation of the internal muscular coat of the rectum was present not only in my own sections, but also in some twenty sections lent me by Mr. Wood Jones. The longitudinal muscular coat and the external sphincter showed no variation from the usual description. One section showed that the depressions between the columns of Morgagni continued under the rectal shelf for some distance into the submucosa of the rectal wall, these diverticula being lined with stratified epithelium.

The conclusions which I have drawn from the above are as follows:

1. That there are commonly valve-like folds uniting the upper ends of the columns of Morgagni.
2. That these folds seem to represent remnants of the embryonic proctodaeal membrane.
3. That the epithelium of the proctodaeum may be prolonged upwards, under these valves, into the rectal submucosa, and that these prolongations may persist as diverticula in the adult.
4. That where such diverticula are present it is an indication that the merging into one of rectum and proctodaeum has been imperfect to a greater or lesser extent.

The vertical measurement of the columns of Morgagni is marked by considerable variation, from 5 to 15 mm. being the average. It is known that the depth of the proctodaeum varies in like manner, so that it is reasonable to take the vertical measurement of the columns as some indication of the depth to which the proctodaeal

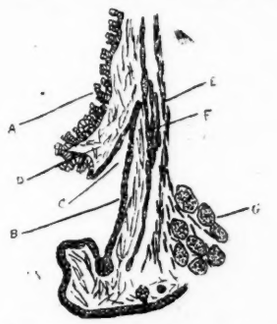


Fig. 2.—A, Rectal mucous membrane. B, Stratified epithelium of anal canal. C, Ingrowth of epithelium from proctodaeum. D, Remnant of proctodaeal membrane. E, Longitudinal muscular coat. F, Circular muscular coat with internal sphincter. G, External sphincter.

depression extended before it became continuous with the rectum.

The Pathological Significance of these upper valves and the sinuses beneath consists in:

1. The occurrence of inflammation in and around them produces symptoms of painful defaecation.
2. The possible part they may play in the formation of submucous fistula.
3. The possibility that the occurrence of inflammatory mischief at a spot where there is partially buried epithelium may originate carcinoma of the squamous variety, such as is found in the anal canal.

REFERENCES.
[1] BRITISH MEDICAL JOURNAL, December 12th, 1908, p. 1741. [2] *Lancet*, January 9th, 1909.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TREATMENT OF "PORT WINE" STAIN.

I READ in the BRITISH MEDICAL JOURNAL of February 6th, in the paper on radium, by Sir Frederick Treves, the following:

> It can cure "port wine" stain, and I would ask surgeons at the present day what measure they have available of which they can say the same.

In answer to this I would say that, in my opinion, the most successful method of treating such at the present day is by the *x* rays. It is five years since I first used this method for a "port wine" stain involving almost the half of the face. The patient was shown at a meeting of the Glasgow Northern Medical Society. The result was extremely good, and was produced without noticeable scar. Since then I have been using the same method in other similar cases, and have found no method equal to it.

Glasgow. JOHN DONALD.

RADIUM IN LUPUS ERYTHEMATOSUS.

THE great interest which has been aroused by the treatment of lupus erythematosus by radium has induced me to send you photographs and brief particulars of a case in which that remedy has been successfully used.

D. M., a girl aged 11 years, with tuberculous history on mother's side, was attacked by lupus on the bridge of the

Fig. 1.

nose in September, 1906. After undergoing treatment elsewhere, she came as an out-patient to the Chesterfield and North Derbyshire Hospital, and the *x* rays were applied. The disease was arrested, and eventually the part healed, with some loss of substance and consequent disfigurement. Whilst the nose was being treated, a second outbreak of the disease commenced a little to the inner side of the left leg, below the patella (Fig. 1). The *x*-ray treatment was applied, but this time unsuccessfully, and, as the disease was spreading, it was thought advisable to send the patient to one of the London hospitals for the Finsen light treatment. As she would have had to wait a considerable time before admission, and the disease was rapidly increasing, I decided to try the effect of radium bromide, placed on a small disc and covered with mica. The ulcerated surface was covered with thin oiled silk, and the disc was moved slowly over the surface from twenty to thirty minutes, once or twice a week, as was thought requisite. The treatment was continued for a lengthened period, with the result as shown in the photograph.

Fig. 2.

GEO. BOOTH,
Consulting Physician, Chesterfield and North Derbyshire Hospital.

MAMMARY CANCER RECURRING FOURTEEN YEARS AFTER OPERATION.

AFTER the address of Sir Hector C. Cameron, published in the JOURNAL of March 6th, the following notes of a case may be worth recording. In 1892 I persuaded a patient to go to the Royal Infirmary, Edinburgh, for operation. The left breast and all the lymph glands were

thoroughly removed. Her general health soon improved, and remained good till over two years ago. The disease appeared at both extremities of the old incision over the sternum and high up in the axilla, while the right well-developed breast remained quite healthy. The ulcer with its everted indurated edges and foul sanious discharge ate deeply into the tissues covering the sternum, and gradually, though slowly, extended upwards in the shape of a heart—apex downward—to the top of the breast bone. The skin over the trachea was affected, and frequent attacks of dyspnoea occurred. There was much stinging pain, with sleeplessness and emaciation. The sore in the axilla gave very little trouble, and for a wonderfully long time the right breast escaped. The poor woman was patient and resigned. All at once, however, the cancer, as if starved over the sternum, attacked ferociously the other breast, and quickly ate away from the sternal side a concave semicircle over the muscle beneath the gland.

The woman was now so weak, sallow, and emaciated that nothing further could be done, and she sank a few months ago, at the age of 64. In this case the woman was cheery and healthy for about fourteen years between the first and second attacks, instead of the two years we used to reckon upon.

The recurrence at the extremities of the primary line of excision points clearly to a residue from the first attack, and the attack on the other gland was very like a fresh and rapid outbreak of the disease, for there was no connexion between the dry, brittle sternum and the breast now attacked.

Kirkwall, N.B. D. McNeill, M.D.

ACUTE CEREBRAL PALSY IN A CHILD.

The following case occurred recently in the Orphan Homes of Scotland, Bridge of Weir. It presented certain difficulties in diagnosis.

History.

A boy, aged 10, who had been a resident in the homes for four years, was admitted to the hospital on February 7th, 1909. For a fortnight previous to admission it was noticed that he had tremor, exaggerated on voluntary movement, and weakness in the lower limbs. There was also a history of his always having been dull mentally.

Condition on Admission.

The patient was well nourished; the face was rather flushed; Hutchinson's teeth were well marked; the pulse was slow (50), irregular, and intermittent; there was slight cough.

Nervous System.

Consciousness and memory were unimpaired. Speech was distinctly staccato. There was paresis of both lower limbs, the patient being unable to walk without support, and dragging both feet. There was volitional tremor of the upper limbs, which ceased when the patient was at rest; there was an oscillating movement of the head on attempted movement, and tremor in the tongue, but no muscular atrophy, and no apparent disturbance of the sensory functions. The knee-jerks were present, but not exaggerated; there was no ankle clonus; Babinski's sign was elicited; the reflexes in the upper limbs and the organic reflexes were normal. The pupils were equal and regular in outline, moderately dilated, and reacting sluggishly to light and accommodation. Lateral nystagmus was present. There were a few rhonchi in the upper lobe of the left lung; the spleen was not enlarged, and the other systems apparently normal.

A few hours after admission mental symptoms were noticed, such as occasional outbursts of laughter with no apparent cause, imagining brushes had been put in his bed, and attempting to get out of bed.

February 8th. There was no change in the condition, except that speech had become distinctly "slurring"; he had no difficulty in swallowing, and took nourishment well.

February 9th. His condition was much worse; there was pallor of the face; he appeared to be conscious, but was unable to speak, though he seemed to make attempts to do so when spoken to. He was unable to swallow, food stuck between the cheek and gum, and saliva dribbled from the mouth. The features were immobile and mask-like, the mouth partly open, and the tongue protruded between the teeth. There was complete suppression of urine, and nothing was passed per rectum; he appeared to doze at intervals, and occasional jerky movements of the right arm and both lower limbs were noticed. The temperature was subnormal, and pulse 50. Some hours later there was rigidity of the left arm, which could not be fully extended, and both knee-jerks were lost. He gradually grew weaker, and expired at midnight.

Post-mortem Examination.

The brain was large and soft, and markedly congested, and numerous punctiform haemorrhages were seen throughout the grey matter; there was no evidence of meningitis. Microscopic sections of the cerebral cortex (stained by the aniline-blue-black, Van Giesen, and Nissl methods) showed proliferation of neuroglia and thickening of the vessels. The nerve cells were markedly degenerated, and showed advanced chromatolysis. In some the cell outline was indistinct, the nucleus excentric, absent, or in a few cases vacuolated; the processes, including the axis cylinder process, had sometimes entirely disappeared. The lungs showed numerous tuberculous nodules scattered throughout, most marked in the left lung; in the upper lobe of the latter was a fibrosed area. The mesenteric glands were enlarged.

The diagnosis evidently rests between disseminated sclerosis, acute ascending paralysis (Landry's disease), juvenile general paralysis of the insane, and cerebral syphilis. Before death the case presented features of bulbar paralysis, which was evidently the terminal cause of death. Attention may be drawn to the acute course of the illness—eighteen days.

Eleanor A. Gorrie, M.B., Ch.B.,
Ada E. Miller, M.B., Ch.B.,
Resident Physicians,
Consumption Sanatoria of Scotland, Bridge of Weir.

THE DEVELOPMENT OF THE PARASITES OF ORIENTAL SORE IN CULTURES.

It may be of interest to some of your readers to hear that I have recently received from Dr. R. Row, Fort Bombay, two communications, accompanied by sketches and preparations, describing the successful culture of Wright's bodies (*Leishmania tropica*) from Oriental sore, and their development into flagellate forms.

When cultivated in human blood serum at the temperature of the laboratory (25° to 28° C.), Dr. Row found the parasites to increase in size and multiply by fission, so that the culture after forty-eight hours contains clumps and masses of relatively large, banana-shaped parasites, each having the macronucleus near the middle of the body, and the micronucleus near one end which is slightly blunter than the other. At or shortly after forty-eight hours a flagellum grows out from the micronucleus at the blunter end, and each parasite becomes a *Herpetomonas*-like organism, which swims actively by means of its flagellum, and becomes free from the clump. At seventy-two hours the culture consists of numerous such flagellate individuals, occurring singly or in pairs or small groups.

It is thus seen that the Wright's body of Oriental sore undergoes in cultures a development very similar to that discovered by Rogers in the case of the Leishman-Donovan body of kala-azar. There is, however, an interesting difference in the mode of cultivation necessary to obtain development, since Dr. Row was only able to cultivate Wright's bodies in human blood serum, and failed to obtain any development when the parasites were planted in sodium citrate. The difference in the reactions to cultural conditions of the two parasites indicates that their modes of transmission and development are also different.

This is, I believe, the first time that the parasites of Oriental sore have been successfully cultivated up to the flagellate stage. I have sent Dr. Row's paper, with illustrations, to the *Quarterly Journal of Microscopical Science*, where I hope it will shortly appear.

E. A. Minchin,
Professor of Protozoology in the University of London.
Rovigno.

Reports of Societies.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

Friday, March 19th, 1909.

Sir PATRICK MANSON, K.C.M.G., President, in the Chair.

Kala-azar.

THE PRESIDENT showed a second case of apparent cure of kala-azar by injections of atoxyl. The patient, an officer in the Indian Army, who had been stationed on the North-West Frontier, fell ill in September, 1907, and in April, 1908, had all the clinical symptoms of kala-azar. Puncture of the liver revealed Leishman's organism after a considerable search. The patient was then put upon a course of atoxyl injections—3 grains every third day, soamin being afterwards substituted. There was little improvement for three months, but in August, for the first time in twelve months, the fever disappeared, and the patient gradually became quite well. Since then he had had no relapse, and was now apparently cured. *Post hoc*, however, was not *propter hoc*, and one or two cases did not justify absolute conclusions, but clinically the case was interesting and suggestive.

Work in the Philippines.

A summary of the work of a medical board which consisted of Major Ashburn and Captain C. F. Craig of the United States Army, embodying the chief results of their researches in the Philippines from March, 1906, to July, 1907, was read for Captain CRAIG. The writers stated that they considered they had obtained sufficient evidence to justify the differentiation of a new species of filaria indigenous to these islands. They based their conclusions on the fact that the embryos showed no periodicity, and that they were characterized by morphological features which distinguished them from those of *Filaria bancrofti*, and from all other filariae parasitic in man. *Filaria bancrofti*, however, as had recently been shown by Phelan and Nicholls, was, contrary to their original ideas, still the most common filaria in Manila, but these observers had also found one instance of infection by the parasite which it was now proposed to call *F. philippinensis*. Five cases of infection had been carefully studied by the writers, and in every instance it was found that there were practically the same number of filariae in the peripheral circulation during the day as at night. There was, in fact, nothing approaching periodicity, which had been always regarded as one of the essential characters of *F. bancrofti*. The morphological characters were also different, and the embryo possessed marked powers of progressive motion. Embryos also developed readily in mosquitos, but only in some species, *Culex fatigans* being the usual secondary host; they had not been able to obtain development in Stegomyia. A peculiarity to be noted about the ingestion of filariae by mosquitos was that a much larger number of embryos could be found in the stomach of the insects after feeding than were ever present in an equal quantity of peripheral blood; this apparent power of selection was difficult to explain. The time of development—until the metamorphosed embryo reached the labium of the mosquito and was ready for transmission to a new host—was fifteen days. With regard to the etiology of tropical dysentery, the results of their researches had been to confirm almost in every particular the work of Schaudinn; and they now regarded the differentiation of intestinal amoebae into pathogenic (*Entamoeba histolytica*) and non-pathogenic (*Entamoeba coli*) as fully proved. Infections by *Entamoeba coli* was extremely common in the Philippines, but that harmless parasite could be readily identified in the faeces and distinguished from its pathogenic relative without clinical observation. As to the etiology of dengue, the experiments of Graham, of Bayreuth, who showed that the disease was transmitted by mosquitos, were corroborated by experience gained in the Philippines. Both by filtered and unfiltered blood they had been able to transmit dengue from naturally infected soldiers to healthy men who volunteered for the experiment. There could be no doubt about the specific character of the infection, and they concluded that dengue was due to an ultramicroscopic organism (less than 4 μ) which could pass through a filter that retained *Micrococcus melitensis*. They had also transmitted dengue by infected mosquitos, but their experiments were by no means always successful. Failure was probably due to the fact that a number of the men had already been infected during an epidemic of dengue, for it was shown that several of them were quite immune to the disease. Contagion could be absolutely inhibited by the use of mosquito curtains, and dengue could not be transmitted by fomites. Further inquiry into the etiology of framboesia had confirmed Castellani's views that the disease was caused by *Treponema pertenuis*. That organism was morphologically indistinguishable from *T. pallidum*, and it had the same staining reactions. The average number of curves was eight, but as many as seventeen had been counted. In capillary tubes of serum *T. pertenuis* remained alive for many days—in one instance thirty-four—and in these circumstances multiplication occurred by longitudinal fission. In tubes, agglutination was also a marked phenomenon. The commission had successfully inoculated five monkeys (*Cynomolgus philippinensis*) by serum from yaws tubercles taken from three different patients, and had recovered the treponema from all of the resultant lesions. Monkeys inoculated with heart blood and splenic juice did not develop yaws, nor did monkeys which had recovered from a previous attack of the disease. They had examined serum from many other varieties of tumour from many different sores, but they had found *T. pertenuis* only in yaws.

Dr. G. C. LOW said that, with reference to the filaria, there was much doubt as to how far it was justifiable to establish new species upon embryonic characters alone, although it was true that that had been done previously in the case of filaria. So far as he could see at present, insufficient evidence had been adduced by Captain Craig to justify the separation of *F. philippinensis* from *F. bancrofti*. The measurements were practically the same, the structure apparently identical, and progressive movements had possibly been due to the fact that the embryos had shed their sheaths. Nocturnal periodicity was not an essential specific character, and embryos of *F. bancrofti* were sometimes found in the peripheral blood during the day.

Mr. F. E. AUSTEN said that, with reference to the etiology of dengue, an epidemic fever which had recently appeared among the troops in the service of some of the Balkan States, and which was also prevalent in the Levant and in other places, had been asserted to result from the bite of an insect—*Phlebotomus papatassii*. This was a species of the large family of sand flies, and, so far as he could judge, the fever which it conveyed closely resembled dengue. Allied species of phlebotomus occurred in many of our own colonies. He had recently seen specimens from Timbuctoo and also from India, and it was probable that in the latter country a form of surra, which affected Tonga ponies, was conveyed by sand flies. Sand flies differed from mosquitos, in that they were much smaller, and that their cuticular coverings were hairs and not scales.

Sir PATRICK MANSON agreed with Dr. Low that more evidence was wanted to establish *F. philippinensis* as a new species. With regard to Entamoeba, Captain Craig's views appeared to be opposed to those of Musgrave, Strong, and other investigators who had worked in the Philippines, and the question of pathogenic function could not be regarded as finally settled.

Malta Fever.

Drs. G. C. LOW and ANDREW FOY read notes of cases of Malta fever which had been acquired in Northern Nigeria.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Friday, March 12th, 1909.

A. R. PARSONS, M.D., F.R.C.P.I., President, in the Chair.

Polyserositis.

MR. W. I. DE C. WHEELER showed specimens from a man aged 34, sent from Galway with a large ascites. He was fairly healthy and had no other symptoms. Two years previously he had had his right pleura tapped, and when he came to hospital a small left pleural effusion was found

and tapped. The ascites increased in hospital. Ten days after admission the abdomen was opened. Covering the liver was a thick capsule, and over it there were little dips as if peas had been pressed into the surface of it. The liver was not cirrhosed. There were adhesions between the great omentum and the abdominal wall. The Talma-Morison operation was performed. No sign of tubercle was found, and there was no growth of any kind. The operation seemed to relieve the ascites, and he lived eight weeks. He was only tapped once after it, and a very small quantity of fluid was found.

Dr. HARVEY said that on opening the abdomen only a small quantity of fluid was seen, but a considerable amount was afterwards found shut off by intestinal adhesions. The peritoneum covering the intestines was everywhere thickened, and in places an abundance of comparatively recent fibrin was matting the coils together. The liver was covered with a thick, opaque white capsule, in which irregular pits were seen, giving somewhat the appearance presented by snow on which drops of water are sprinkled. The surface of the spleen was somewhat similar. The cut surface of these organs was scarcely, if at all, abnormal. The spleen was perhaps a little tough but not at all markedly cirrhotic. The kidneys were normal in macroscopic appearance; their capsules stripped easily. The thoracic viscera were densely adherent to themselves and to the parietes. It was found possible after some time to isolate the left lung, which, in addition to general adhesions, was firmly attached to the diaphragm by a dense, finger-like process. The pleura was enormously thickened, and the whole organ when removed looked rather like an enlarged spleen. It was not possible to separate the heart and pericardium from the right lung. The pleura was not so extremely dense as that on the left side, and the right pleural cavity contained a considerable amount of fluid. The pericardium was greatly thickened, and closely adherent everywhere to the heart. On section it had a dense cartilaginous appearance. The heart was somewhat atrophic, the endocardium normal. Inoculations were made from the centrifuged fluid in the pleural and peritoneal sacs into four guinea-pigs, but without result. Microscopic sections showed the organs to be remarkably free from cirrhosis except immediately beneath the thickened capsules. The organs themselves were fairly normal but for congestion and some parenchymatous degeneration to be seen in the liver and kidneys. Part of the left lung near the pleural surface showed collapse with fibrosis, while portions of the right lung were emphysematous. The organs, with the exception of the above-mentioned changes, were healthy, while their serous coverings were immensely thickened, and such serous cavities of the body as were not totally obliterated were distended with fluid. There was absolutely no evidence of tuberculosis either in the sections or as a result of inoculations.

Dr. KILPATRICK said he had seen the patient during life, and thought the multiple serous effusions were probably the result of tuberculous infection. He saw him after the operation, and he was perfectly comfortable and better, then he suddenly died. Both the pathological finding and the clinical history were very remarkable.

Dr. MOORHEAD said he had seen an almost identical case two and a half years ago. Such cases were of very considerable interest from their rarity.

Mr. WHEELER, in reply, said it had occurred to him that tertiary syphilis might explain the case, but there was no history of such.

Dr. HARVEY, in reply, said the remarkable thing was not why the man died, but how he lived. He had seen nothing so dense as the mass of adhesions in his thorax, and it was wonderful how the organs could move at all.

ROYAL SOCIETY OF MEDICINE.

OBSTETRICAL AND GYNAECOLOGICAL SECTION.

Thursday, March 11th, 1909.

HERBERT R. SPENCER, M.D., President, in the Chair.

Pernicious Vomiting.

DR. DRUMMOND MAXWELL gave an account of a fatal case of pernicious vomiting of pregnancy in a primigravida aged 26. Diagnosis was difficult, since the patient, after admission to hospital, ceased vomiting, and there was only the history of severe vomiting at home, unassociated, however, with marked wasting. There was no characteristic alteration of the urine, and no albuminuria; the only ominous signs on admission were drowsiness and a very rapid, weak pulse; there was no jaundice. The patient passed successively through stages of restlessness, delirium, mania, and final coma. Autopsy revealed hyaline degeneration and necrosis of the central cells of the hepatic lobules, the kidneys also showing a severe parenchymatous nephritis. The diagnosis, uncertain during life, was based finally on the *post-mortem* appearances.

Ovarian Actinomycosis.

MESSRS. FRANK E. TAYLOR and WELBY E. FISHER, recorded a case which they claimed to be one of primary ovarian actinomycosis. Only six other cases of ovarian actinomycosis were on record, and in these the ovary had been infected by extension of the disease from some other locality. Professor R. F. C. LEITH said that the specimen shown was a good example of ovarian actinomycosis, but caution must be exercised before accepting the contention of the authors that the disease was primary in the ovary. Of the recorded cases of ovarian actinomycosis—a not inconsiderable number—there were some in which the evidence favouring a primary incidence of the disease in the ovary was very strong, sufficiently so to convince their observers of their authenticity. In the case under consideration, the clinical history, both before and since the operation, lent considerable support to the authors' contentions, but the actual relationships of the ovary to all the neighbouring tissues were not fully revealed. In a case which he had himself investigated, the ovary and part of the tube were affected. The rectal wall was thickened, and in the dense fibrous adhesions binding it to the ovary there were plentiful actinomyces growth. Colonies were also found in the rectal wall and in the wall of the descending colon. His interpretation of this case, though still *sub judice*, placed the primary disease in the intestine, from which it had spread to the ovary, the intestinal lesions subsequently cicatrizing and healing. He ventured to suggest that a similar interpretation might be placed upon the present case. The speculation of the authors that the actinomyces had entered the body by some hidden path without causing a local lesion, and had been carried to the ovary by the blood stream, was scarcely probable. One of the chief characteristics of this disease was the formation of a local lesion at or near the site of entrance, and a spread therefrom by direct continuity of tissue. Spread by the blood stream did take place, particularly the portal blood stream, but this was characteristically a late method of extension. Dr. T. G. WILSON remarked how difficult it was to be quite sure that a condition like actinomycosis was really primary in the ovary, and had not come originally from some part of the bowel, and described a case in point

Primary Carcinoma of the Vagina.

Dr. HY. RUSSELL ANDREWS described the case of a multipara, aged 62, who had a carcinomatous ulcer, the size of a two-shilling piece, high up on the posterior vaginal wall. The cervix was free from carcinoma. The whole vagina was dissected out from below, and removed together with the uterus. At an early stage of the operation the vagina was converted into a closed bag by clamping with forceps bent at a right angle, with the object of preventing infection of the raw surfaces by carcinoma cells. The peritoneal cavity was closed by sutures, and the cavity between the rectum and urethra became obliterated. The patient was quite well when last seen, February, 1909, eighteen months after the operation. The PRESIDENT thought there was some advantage in the operation performed by Dr. Andrews, especially as there would appear to be less risk of the vagina tearing. Dr. F. J. MCCANN said he had operated on a patient with primary cancer of the vagina by a different method to that mentioned by Dr. Andrews, and she was free from recurrence when last seen, four and a half years after the operation. He had seen five examples of primary cancer of the vagina. Dr. H. MACNAUGHTON-JONES said that in view of the very few cases of primary carcinoma of the vagina recorded in British literature, he had sought for some statistics from abroad. From all these sources he had only been able to collect twenty-three instances of primary disease. In deciding the point of primary infection, it was absolutely necessary to exclude the portio and vulva. Dr. A. H. N.

LEWERS said he was surprised to find that some of those present considered this condition very rare. He had himself seen, speaking from memory, at least 15 or 20 cases of primary carcinoma of the vagina. In none of them, however, was the disease at a sufficiently early stage to induce him to attempt a radical operation, and he had therefore been obliged merely to scrape and cauterize the growth in such as had seemed to require some active treatment. Dr. RUSSELL ANDREWS, in reply, said that this was the only case of primary carcinoma of the vagina that he had seen. From what he had read he had considered that the condition was rare.

HARVEIAN SOCIETY OF LONDON.—At a meeting held on March 4th a discussion on the early diagnosis and treatment of *Cancer of the stomach* was opened by Dr. HALE WHITE and Mr. B. G. A. MOYNIHAN, whose papers are published at pp. 828 and 830. In the discussion which followed, Mr. D'ARCY POWER said his experience had been that hospital cases came for treatment in the late stages, and that private cases were unwilling to be treated for more than indigestion until haematemesis or secondary growths occurred. Carcinoma was nearly always secondary to chronic ulceration, developed slowly, and was localized for a considerable time to its point of origin. Secondary growths were unusual, and glandular enlargements in immediate neighbourhood might show no epithelial deposit. He had had no case under 30, and the majority of cases were between 50 and 70. Both sexes were affected equally. The symptoms were similar to those of chronic ulceration. No reliance could be placed upon the result of a single examination for free hydrochloric acid. A skiagraph after administration of bismuth had proved valuable in a case of advanced carcinoma; but his experience in early cases had shown that skiagraphs failed to reveal any thickening of the mucous membrane. Most reliance must be placed on an exploratory operation. If a thickening be found, a part should be removed and examined microscopically by a skilled pathologist whilst the abdomen was open. If the mass prove carcinomatous, a partial gastrectomy should be performed, together with a posterior gastro-enterostomy, an operation well borne by the patient. Irritation not only led to cancer, but increased the rapidity of growth. It was a mistake to allow a chronic ulceration of the stomach to continue indefinitely; a gastro-enterostomy should be performed in such cases, and thus produce anatomical rest. Further, in cases of carcinoma where complete removal was impossible a gastro-enterostomy would prevent further irritation. Dr. ROLLESTON said that very different pathological and clinical conditions were included under malignant disease of the stomach. Rare cases of diffuse lymphosarcoma, extending like a sheath along the alimentary canal, and possibly of infective origin, were obviously unsuited for the radical treatment of excision. The more ordinary forms of malignant disease fell into two main groups, which differed entirely in their clinical symptoms and as regards their possibility of cure by operation. The two groups were: (1) Carcinoma of the cardiac end, where the symptoms were mainly constitutional, namely, fever, anaemia, and debility, and suggested tuberculosis or infective endocarditis; (2) carcinoma of the pylorus, where the symptoms were mainly mechanical. As a subdivision of the second group might be included cases of carcinoma spreading from the pylorus and lesser curvature to the body of the stomach, and producing the leather bottle stomach. In Group 1 the growth was rapid, prone to necrose, to invade the left lobe of the liver, and set up diffuse suppuration on the adherent liver, a condition most unsuitable for operative measures. He quoted cases of carcinoma of the cardiac end of the stomach resembling pulmonary tuberculosis. One patient with fever and intestinal haemorrhage brought up material containing acid-fast bacilli, but the necropsy revealed a gangrenous carcinoma containing acid-fast bacilli and no tuberculosis; the situation of the growth prevented vomiting. In another case a gangrenous carcinoma produced a subphrenic abscess, which in turn led to a left pleural effusion, which was the most obvious feature during life. In cases of carcinoma of the pyloric end, the diagnosis should be made before a tumour was palpable, for metastasis had occurred in many cases by this time. In a patient with symptoms strongly suggesting gastric carcinoma, in whom a test meal shows an absence of hydrochloric acid in the gastric juice, exploratory laparotomy was justified to settle the question in the absence of tumour. It was important, when such an exploratory operation was undertaken, that the surgeon should, in the event of carcinoma being found without obvious metastasis, proceed to partial excision of the stomach, and not rest content with gastro-enterostomy. Mr. V. WARREN LOW said he had yet to learn how to make an early diagnosis in cancer of the stomach. He thought that a careful analysis of the symptoms, such as pain, increasing ill-health, etc., left a considerable degree of uncertainty in the individual case, especially in the class of case where the patient had suffered from stomach symptoms all his life. It was in every one's knowledge that constantly cases occurred where even the most experienced surgeons had been deceived at an operation by the similarity of an old ulcer to a malignant growth. He quoted a case in which in 1898 an anterior gastro-enterostomy was performed at St. Mary's for what appeared to every one to have been a hopeless case of stomach cancer. This patient was alive and well two or three years ago. As far as his experience had gone, he had learnt to rely very largely on the expert examination of the stomach contents. Dr. ARTHUR F. HERTZ attached great importance to two recent methods of examination in the early diagnosis of cancer of the stomach—namely, occult blood in the faeces and skiagraphy. Haemorrhage from a gastric growth was rarely sufficient to give rise to obvious melaena, and blood was visible in the vomit in less than 40 per cent. of cases. Minute haemorrhages were constantly occurring from the surface of every malignant ulcer, so that a small quantity of blood was constantly excreted in the faeces. Ewald first utilized this fact for diagnosis. Chemical tests were more satisfactory than microscopical or spectroscopic; the best were the guaiacum and the benzidene reactions made with ethereal extracts of stools after treatment with glacial acetic acid. Meat diet should be avoided for a few days prior to the first examination; 92 per cent. of 266 recorded cases gave a positive reaction. In no single case of gastritis, nervous dyspepsia, or pernicious anaemia had the test for occult blood in the stools been positive. In simple gastric or duodenal ulcer blood might be present in the stools, but always disappeared in two or three days under dietetic treatment. His experience with skiagraphy showed that information about the size of the stomach and the rate with which it got rid of its contents was not so reliable as that obtained by certain older methods of examination. Inflation of the stomach by carbon dioxide, produced by action of tartaric acid on sodium bicarbonate, gave constant results in sound individuals. Very slight dilatations could be readily recognized by this method. Traces of bismuth might remain in the stomach six hours after a bismuth meal sufficient to cause a shadow to x rays, and no evidence of pyloric obstruction was thus obtained. Traces of food residue, obtained by a tube at 8 a.m. after the last meal had been taken at 8 p.m. afforded almost conclusive evidence of organic stricture of the pylorus. After a bismuth breakfast x rays might show: (1) Obstruction at the cardiac end of the stomach, due to growth in this situation; (2) abnormality in the outline of the stomach caused by a projection of a growth into the lumen; (3) obliteration of the pyloric vestibule due to growth near the pylorus. Mr. CRISP ENGLISH said that the important early signs of cancer of the stomach should be given a more prominent place in textbooks on medicine and surgery; too much space was usually devoted to the classical signs, and patients suffering from the classical signs were usually in a hopeless condition. He referred to the difficulty which sometimes occurred during an operation in diagnosing a chronic ulcer from cancer, even after careful inspection through an opening in the stomach. If the possibility of a radical operation arises, the diagnosis must first be certain; his own practice in such cases had been to excise a portion of the diseased area for microscopical examination, and then to do a gastro-jejunostomy; if the excised portion proved malignant, a partial gastrectomy was performed later. He urged the more frequent performance of partial gastrectomy in preference to the palliative operation of gastro-jejunostomy.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—At a meeting on March 4th, Mr. P. E. BARBER, President, in the chair, the following were among the cases shown:—Dr. G. WILLIAMSON: (1) Partial *Gastrectomy* and excision of about 10 in. of the transverse colon for carcinoma. About two-thirds of the stomach had been excised and posterior gastro-enterostomy performed. The transverse mesocolon was adherent to the posterior wall of the stomach and infiltrated with carcinoma. This necessitated resection of part of the transverse colon. The ends were closed by suture and lateral approximation performed. (2) Double *Frontal, ethmoid, and maxillary antral suppuration*, in which radical operations had been performed on all the sinuses. Submucous resection of the septum was performed to allow access to the left nostril. Dr. W. S. KERR: (1) A bilateral abductor *Paralysis of the vocal cords*. There was a feeling of fullness in the larynx externally and slight oedema of the arytenoid region. The inspiratory stridor was well marked. There was no dysphagia. The case was thought to be one of perichondritis of the cricoid. There was no disease of the chest or central nervous system. The case was improving under iodide of potash. (2) Cases of *Chronic maxillary sinusitis* treated by the radical operation. One was followed by a severe and extensive attack of erysipelas involving the face, scalp, and neck. Slight oedema of the affected cheek still remained after six months. Dr. GILBERT MOULD, in a paper on the *Treatment of incipient insanity*, remarked that in spite of the diversity of mental diseases when fully developed there was at the commencement a great similarity of the symptoms. These included (1) changes in the circulation of the skin, loss of weight, loss of appetite, fetor of breath, constipation, amenorrhoea, and frequently headache; (2) excitement or depression, sleeplessness, alteration of character, alienation from friends and relatives, often bad dreams and noises in the head. The treatment of symptoms must not be neglected on the ground that they did not constitute the fundamental change, for in a disease of which so little was known it was quite rational to treat symptoms. As a rule patients were better treated away from home. Strict Weir Mitchell treatment was of limited utility; more recently rest in bed in the open air had been advocated. The old treatment of vigorous walking exercise gave good results in many cases. It did not follow that because a woman had broken down under the strain of tending a large family she required absolute rest in bed. It was sufficient in these cases that they had removed the strain. Nutrition was most important, administration of large quantities of milk being almost entitled to be regarded as a specific in the treatment of incipient insanity. Tobacco should be stopped, though there might be exceptions in the old. Most cases did better without tea. As small fluid intake meant irritability, plenty of fluid should be taken. Hypnotic suggestion in the hands of a gifted reputable practitioner might be of the utmost value. The greatest obstacle to the effective treatment of early insanity was the legal difficulties in the way of the medical man who wished to put his patient under proper care. Dr. GODFREY CARTER, in a paper on *Post-influenzal conditions simulating phthisis*, related four cases where following influenza there resulted a condition completely simulating phthisis. There was apical consolidation with well-marked signs associated with loss of weight, nocturnal temperatures of 100° and thereabouts, rapid pulse, but no tubercle bacilli in the sputum. All the cases recovered in the course of a few months, and the physical signs completely disappeared. In one case there was a large pleural effusion. Drs. F. WADDY, G. SIMPSON, and A. E. BARNES joined in the discussion, and related cases where, following influenza, there had developed tuberculosis, and the bacilli had only been found after several examinations. Dr. CARTER, in reply, said that in his cases there had been such marked signs that if they were due to tuberculosis there would almost certainly have been bacilli in the sputum. Recovery was also so complete and rapid that tuberculosis was out of the question.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—At a meeting on March 12th, Dr. EDWARD SERGEANT, President, in the chair, a discussion upon *Amendments to the Midwives Act* was opened by Dr. KAYE. After giving some account of the conditions which were to be found in the West Riding prior to 1905, he referred to a large and indefinite class of "handy women," who were ready to render assistance in any sort of illness among their neighbours, including confinements, with or without a doctor, payment being in money or in kind. In twenty-two sanitary districts in the West Riding there was no certificated midwife. In 1910 it would have to be decided what could be done for districts in which the work was at present being done by women who could not legally do it after that date. There would also be the probable failure of the supply of certificated midwives to fill the gaps made by the retirement or death of those now acting. After setting on one side as impracticable proposals that there should be a postponement of the penal sections of the Act, and that the handy women should be allowed special facilities for becoming enrolled, Dr. Kaye suggested that to meet the anticipated difficulties the Act should be so amended as to authorize local supervising authorities to grant to suitable uncertified women a modified licence applicable only for a given period and within a well-defined area. The women so licensed should undertake to keep a list of the cases attended, and to observe certain primary rules. They should also be deprived of their licences in the event of a certificated midwife settling in the district. Drs. MUSGRAVE, CRAVEN, and MEREDITH YOUNG were opposed to any proposal which had for its object the payment out of public funds of the cost of training midwives. Dr. BOWEN-JONES thought that the uncleanly habits of the handy woman was often the cause of serious mischief. Dr. TUBB THOMAS said that it was very difficult for a midwife to earn a living by her work in country districts. In Wiltshire there were probably not six who were doing so. He disapproved of establishing a second-hand set of midwives, and advocated the subsidising of county nursing associations. Dr. TEW considered that the demand for midwives would be met in good time, though if the rules were rigidly carried out a large number of those already on the roll would be struck off. Dr. MCCLEARY agreed that it would be most imprudent to postpone the carrying out of the Midwives Act at the proper time. If this were done a precedent would be set which might have most far-reaching results. Dr. F. E. CANE did not approve of the handy woman at all; he considered her a nuisance and an abomination. He also referred with dissatisfaction to the manner in which many women were trained as midwives. Dr. LYSTER said that, while the theoretical knowledge of their work had been so extended as to be almost farcical, the amount of practical knowledge was far too little. Dr. ARNOLD EVANS approved of subsidising existing nursing associations, and said that in Bradford the local authority gave to such an association £100 a year. The PRESIDENT said that he should be sorry to be connected with any supervising authority which had power to give secondary licences to untrained women. He looked forward with complacency to 1910 and did not anticipate there would be so much shortage in the supply of midwives as some people thought.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—At the meeting on March 5th Dr. E. FURNISS POTTER described the submucous operation for the removal of deviations and obstructive *Deformities of the nasal septum* as having revolutionized treatment in this direction. What were formerly regarded as purely ledge-like outgrowths of bone or cartilage were in reality the thickened angular summits of septal deflections, hence the sawing off of the obstructing spur was frequently disappointing, as only a small shaving was removed or else a large perforation made. In describing the technique of the operation the author laid stress on the necessity of cutting completely through the mucous and perichondrial coverings in order to ensure success in stripping the septum. If this were not done the elevator would be passed between the mucous and perichondrial layers, and considerable difficulties would be encountered. The operator should always make sure that enough bone and cartilage had been removed, otherwise the result was apt to be disappointing. Indications of sufficient removal were that the two mucous layers should hang plumb in the midline, and that the posterior wall of the pharynx should be easily visible. In conclusion, he claimed the following advantages for the operation: (1) The establishment with certainty of a free nasal passage, (2) no general anaesthetic necessary, (3) rapid healing, no splints or troublesome after-treatment needed.

Reviews.

DISEASES OF THE STOMACH.

THERE could not be a better account of the operative indications in diseases of the stomach than that recently published by Dr. A. DELANGRE,[1] who follows closely upon the lines laid down by Hartmann and Terrier. In his historical review of the development of stomach surgery he credits Mr. Moynihan to America, while "Macdonald" is included amongst distinguished British surgeons. The first part discusses the treatment of malignant diseases of the stomach in which the desirability of early operation and early diagnosis is urged, but nothing is added to our all-too-scanty knowledge on the subject. He considers that surgeons are somewhat prone to talk too optimistically about the cures that would result if cases were sent to them for operation earlier; he maintains that of reputed cures counted in surgical statistics, even among the cases in which early and complete removal was possible, those which have remained free from recurrence for three years do not constitute more than a third of the total. Without wishing to weaken the case for early diagnosis, and while advocating liberal recognition by the profession of the beneficial possibilities of surgical interference in cases of suspected cancer after the means of medical diagnosis have been exhausted, there is ground of complaint that some surgeons regard as suitable for operation all cases of chronic digestive disorder, and open the abdomen without troubling to investigate the stomach by the means which have been placed at their disposal by the labours of physicians. In illustration of the abuse of stomach surgery he mentions the case of a man who suffered from gastric crises whose stomach was opened four times by different operators before locomotor ataxy was diagnosed. The attitude assumed by Dr. Delangre on this question of chronic dyspepsia as an indication for operation is plain; he says that "surgical intervention if practised systematically in all obstinate dyspepsias can only have for its result an operative success followed by a therapeutic failure." According to Leriche's statistics the immediate mortality after stomach operations was in 1,239 cases 25 per cent., but particular operators have lowered this considerably, the Mayos, for example, to 9.5 per cent., and a series of 25 cases with only 1 death; the immediate mortality after gastrectomy is 39 per cent. Delangre follows Hartmann and Terrier in relying upon stasis as the chief indication for gastro enterostomy, and in this he is right. Operation for ulcer of the stomach he considers is not justified until after prolonged and strict medical treatment has proved unsuccessful. He deprecates operating for haemorrhage, but where there is constant small bleeding exploration is permissible to "see what can be done"; often all that can be done is to perform a gastro-enterostomy, which gives very satisfactory results. Perforation and pyloric stenosis due to cicatrix are recognized as indications for operation, but he omits to refer to duodenal ulcer. Resection of the ulcer is now seldom performed, and should only be done if cancer is suspected, or where it is on the anterior surface or great curvature; but Ricard speaks of it as a "useless and dangerous practice." The usual operation for chronic ulcer is gastro-enterostomy. Hochenegg found that out of 94 cases so treated 88 per cent. were completely cured and 12 per cent. underwent considerable improvement. His pupil Fibisch experimented on animals by making artificial ulcers of the stomach; one-half of the animals were subjected to gastro-enterostomy and the other half were allowed to remain as controls. The result was that the ulcers in the animals operated upon healed, while in the others they continued to increase in size. After the operation the diet should contain a considerable quantity of fat in order to diminish the secretion of hydrochloric acid, and oil should be given by the mouth. Dr. Delangre accepts the statistics of Lebert, which show that 9 per cent. of cancers of the stomach originate from ulcers; and he holds that where the surgeon suspects early cancerous transformation he is justified in resecting the ulcer and performing a gastro-enterostomy. Gastro-enterostomy is the operation for perigastric adhesions, for total symphysis of the stomach if it is possible, and for all cases of non-cancerous pyloric stenosis with stasis whatever may be the cause. In non-malignant stenosis of the cardia the treatment should be dilatation by bougies through the oesophagus; if this is impossible, the stomach may be opened and the cardia dilated from below. Operations are not advised for simple atonic dilatation, and he speaks of the condition as one in which the knife has been greatly abused. He has no confidence in either gastrorrhaphy or gastroplication. He mentions the exceptional case of severe ptosis with dilatation and intense gastritis treated successfully by Jonnesco by gastropexy, gastrorrhaphy, and gastro-enterostomy. He approves of gastro-enterostomy in hourglass stomach and in tetany caused by dilated stomach. In acute dilatation of the stomach he recommends emptying the stomach by the tube and washing it out. We have not referred to the purely surgical conditions included in the book, as about these there is no difference of opinion. We cordially recommend Dr. Delangre as a safe guide on the matters with which he deals, and should be glad to believe that all surgeons accepted the principles laid down by him.

The monograph on nervous dyspepsia, by Dr. GEORGES L. DREYFUS,[2] is an attempt to summarize the somewhat discordant accounts that have been published by different authorities during the last thirty years, and to restate the case by showing that there are a good many different conditions which have been included under this heading. He defines nervous dyspepsia as a condition which does not depend upon any disease of the stomach, and is in fact not an independent condition, or to be regarded as a disease in itself any more than jaundice and dropsy. It is a group of symptoms made up of a combination of gastric and nervous ailments, but the latter are to be considered as primary. They may belong to various neuroses or psychoneuroses. It is of course possible that organic disease may develop in association with an undoubted psychosis, it is therefore necessary in all cases to make a careful examination of the stomach, and to exclude organic disease by the use of all the diagnostic means in our power. Such an examination is essential, and can do no harm. The prognosis depends upon the cause. Local stomach treatment is generally out of place. If it does good at all it can only be by suggestion. Strict diet is useless, as it only tends to confirm the belief that the stomach is really at fault, but we may suggest that it is often necessary in the treatment of these cases to begin by giving the simplest food. Pawlow's experiments indicate the close relation that exists between psychical impressions and digestion, and Dr. Dreyfus suggests that this connexion may be even closer than anything we at present imagine. He believes that in all cases of nervous dyspepsia psychical symptoms may be found if they are looked for carefully, and he is disposed to say that where they do not exist the case is not one of nervous dyspepsia, but a true stomach disease. He gives an interesting but somewhat one-sided historical account of the disease, and divides the cases into four groups. The first includes psycho-pathological conditions developing in degenerates with dyspeptic symptoms, and this group he subdivides into four varieties: (1) Where the psychopathy is the cause of the nervo-dyspeptic symptoms; (2) psychical dyspepsia; (3) hysterical dyspepsia; (4) "cyclothymic" dyspepsia. The second group includes acquired neurasthenia with dyspeptic troubles; the third, cases dependent upon changes in the innervation of the stomach; and the fourth cases depending upon alterations of the internal secretions. It is notable that he has very little to say about Groups 3 and 4. As may be inferred from this classification, and from what has been said above, he utterly repudiates the position maintained by some writers, that the nervous symptoms are secondary to and depend upon stomach derangement, and in this we think he is upon solid ground.

HEART DISEASE.

IN a series of lectures delivered in 1901 Professor PAWLINOW of Moscow brought prominently forward the somewhat neglected observations of Duroziez on congenital narrowing of the mitral valve and its results upon the whole

[1] *Indications Opératoires dans les Affections de l'Estomac.* Par Dr. A. Delangre. Paris: Vigot Frères. 1909. (Roy. 8vo, pp. 188. Fr. 5.)

[2] *Über Nervöse Dyspepsie.* Von Dr. Georges L. Dreyfus. Mit einleitenden Worten von Professor Dr. L. Krehl. Jena: Gustav Fischer. 1908. (Roy. 8vo, pp. 108. M.2.50.)

organism. These lectures, with many additions suggested by subsequent observations, have now been published.[3] In most textbooks the possibility of a congenital form of mitral stenosis is recognized, but the condition is regarded as one of extreme rarity, and as being in most cases due to fetal endocarditis. Mitral stenosis is not uncommonly observed in young persons, and even in quite young children, without any history of disease to account for it, but pathological evidence has usually shown that a rheumatic or other poison has been at work insidiously, and such a cause is, therefore, generally assumed. Duroziez himself admitted this, but Professor Pawlinow attempts to set up a definite form of congenital mitral stenosis which he maintains to be different in its course from the narrowing produced by a chronic septic process, and therefore worthy to be classified as "Duroziez's disease." Nine illustrative cases are recorded, but in a considerable proportion of these the history shows the occurrence of septic disease, which invalidates the claim for congenital origin. That a progressive and insidious obstruction of the mitral valve should lead to deficient nutrition and development in certain other organs is not surprising, but that the so-called constitutional weakness thus produced should predispose to anaemia and to tubercle is probably true only in a small proportion of cases. The "weakly constitution," whether it be due to chronic mitral obstruction or not, is held by Professor Pawlinow to be a prime factor in the production of anaemia, and to be a predisposing cause for the development of tubercle. The main cause of anaemia is to be found in the imperfect development of the blood-forming organs, due primarily to their own malnutrition from the congenital defect of the heart. Recalling Virchow's views on this point, he devotes much space to the small heart and contracted aorta of the chronic anaemic, but here again the remarks would seem to apply to a small section only of the great class of anaemic persons. In the later section of the book the author labours to prove that the climate of high altitudes is less beneficial to the chronic consumptive than the climate of the plains. The main purpose of the work is to point out the relationship which appears to exist between mitral obstruction of uncertain origin, to which he would give a distinctive name, and those conditions of anaemia and tuberculosis associated with an enfeebled condition of body, and presenting symptoms analogous with those produced by section of the vagi in animals. The idea is worked out very laboriously and with many quotations from other workers in the same field, but it does not throw any new light on the subject. The desire to set up a new disease upon such slender foundations is altogether to be deprecated.

The first fasciculus of Dr. BOCK's volume of lectures on heart diseases, delivered in 1906–7, deals with affections of the heart muscle.[4] It opens with a brief description of the histology and pathology. Under "methods of examination" the usual clinical technique is described, and in addition the principles of a new stethoscope—the results obtained with which constitute the chief feature of the work—are explained. Dr. Bock points out that the real or objective intensity of sound cannot be recognized by auscultation. The ear is led astray by the frequency and arrangement of the complex sound waves. As a measure of the subjective strength of a noise he takes the grade of "damping" necessary to reduce it, without altering its character, to the threshold of audibility. The instrument used for this purpose is a stethoscope terminating in a large receiver, which is divided transversely by a sound-proof diaphragm. In the centre of the diaphragm is an opening, the size of which can be regulated by a graduated hand-screw. The claims set forth for this instrument are briefly as follows: The relative critical points of the normal heart sounds are constant. For example, the necessary dampings may read: First mitral, 90; second aortic, 60; second pulmonary, 55. Hypertrophy and dilatation of the right ventricle, sclerosis of the aorta, vaso-constriction, etc., give characteristic and diagnostic counts. Valvular murmurs and those due to insufficiency can be differentiated; a murmur can, it is stated, be damped until the underlying heart sound becomes audible. Attention may also be drawn to the descriptions of acute dilatation of the right and left heart, to the classification of myocardial affections, and to the accounts given of the condition of the heart in thyroid and prostatic enlargements.

[3] *Kongenitale Mitralstenose (Duroziersche Krankheit), Chlorose, Lungentuberculose in ihren Beziehungen zur schwachen Konstitution des Organismus.* By Dr. C. Pawlinow, of the Royal University of Moscow. Berlin: August Hirschwald. 1909. (Roy. 8vo, pp. 75.)

[4] *Vorlesungen über Herzkrankheiten.* Von Dr. H. Bock. Heft 1. *Die Erkrankungen des Herzmuskels, Histologie, pathologische Anatomie, Diagnose, und Therapie.* Munich: H. Thoma. (Med. 8vo, pp. 92. M. 1.50.)

HEALTH, GROWTH, LONGEVITY, AND DEATH.

A THOROUGH knowledge of the cardinal facts which bear upon the maintenance of mental and bodily vigour cannot be too widely disseminated, and in their recent work on *Health, Morals, and Longevity*[5] the Messrs. GRESSWELL have laboriously put together all the current views bearing on this subject gleaned from the very extensive field of recognized authority and from the less convincing source of contemporary journalism. The information so obtained is classified and discussed under appropriate headings in eighteen chapters, an index adding greatly to the usefulness of the whole as a work of reference. Ranging over such great subjects as the duration of life, the germ theory, and the vast changes arising from its recognition, climate, soil, clothing, food, and, in fact, over the whole field of the physiology of the vital organs, and compressed within the limits of 226 pages, the work cannot be regarded as anything more than a summary of elementary information. As such it should prove useful to popular lecturers, teachers, and students of the ordinary problems of life and health. Some of it has already been presented to the public from the platform. In certain sections, as in those relating to pain, conduct, moderation, and sleep, the writers express their own views, which are for the most part fully in accordance with common experience, and are put forward in the popular and readable style of the journalist. The book contains a vast amount of information, some of it perhaps requiring a fuller knowledge of elementary physiology than is usually possessed by the non-medical reader. The writers have evidently spared no pains in collating the large amount of material for their work, and have added interest to it by their historical retrospection and by their comments on the many modern conditions which tend to invalidate the maintenance of the cleanly mind in the healthy body.

Professor C. S. MINOT's book on *The Problems of Age, Growth, and Death*,[6] is based upon a series of lectures delivered at the Lowell Institute in March, 1907. It tells in an attractive manner many facts concerning phenomena and problems which have a deep and perennial interest for mankind, and, in addition, suggests theories and formulates laws which may or may not find acceptance. The book is essentially readable, for the author carries attention and hope from point to point with a seductive ease which sometimes lures to conviction, though, when the end is reached and conclusions are formed, it may be difficult to see that we are much nearer the solution of the problems than we were at the beginning. The conclusions at which he arrives are best stated in his own words; they are formulated as four laws and a corollary. The first law is that "rejuvenation depends upon the increase of nuclei." The second, that "senescence depends upon the increase of protoplasm, and on the differentiation of the cells." The third is that "the rate of growth depends on the degree of senescence." The fourth that "senescence is at its maximum in the very young stages, and the rate of senescence diminishes with age"; and the corollary is that "natural death is the consequence of cellular differentiation." It is impossible in the course of a comparatively short review, to enter into a detailed criticism of Professor Minot's conclusions, but a few objections may be mentioned. If rejuvenation depends upon increase of nuclei, and if senescence is at its maximum in the very young stages, then we are being

[5] *Health, Morals, and Longevity.* By George Gresswell, M.A. Oxford and Cape, late Lecturer on Physical Science, Rondebosch, and Albert Gresswell, M.A., M.D. Oxford, Surgeon to the Louth (Lincs.) Hospital. Bristol: John Wright and Sons, Limited; and London: Simpkin, Marshall, and Co. 1909. (Demy 8vo, pp. 241. 5s.)

[6] *The Problem of Age, Growth, and Death.* By C. S. Minot. The Progressive Science Series. Edited by E. L. Thorndyke, Ph.D., and F. E. Beddard, M.A. London: John Murray. 1908. (Demy 8vo, pp. 302. 73 figures. 6s.)

most rapidly rejuvenated whilst we are most rapidly growing old, for our nuclei are rapidly increasing in number so long as we continue to grow rapidly. Surely rejuvenation depends not upon the increase of nuclei, but upon the cause of the increase of nuclei; that cause is not known, and Professor Minót throws no light on it, but we know that the increase, in all bisexual and some unisexual animals, follows the union of two cells, both of which are old of their kind, and one of which, as it consists in many cases of very specially differentiated protoplasm, would, in Professor Minot's sense, be markedly senescent, according to his second law. Moreover, the first phase of rejuvenation, as we see it in the higher forms, is associated with a diminution, not with an increase, of nuclei, for it is initiated by the fusion of two nuclei to form one. The first law is not in accord with facts, and cannot stand. The validity of the second, which states the causes of senescence, depends very much on what is meant by senescence. If we are agreed that a cell is old because it has attained its maximum size and specialization, we may admit the conclusion the so-called law suggests, but in that case the nervous system must be nearly senescent when the child is born, though it is capable of doing seventy or more years of good work. Capability would appear to be a better criterion of age than structure or size, but if the point is waived, the deduction that natural death is the consequence of cellular differentiation is not necessarily admitted. On the contrary, it is obvious that the cells of the muscular and nervous systems may exist for many years after their growth and specialization is completed, and there is no reason to believe that they cease to function because they have achieved their complete size and differentiation. Professor Minot's book will stimulate thought, even if his conclusions do not secure acceptation; but he himself will probably admit that he has neither found the key of the door of life, nor pierced the veil which guards the secrets of death.

NEURASTHENIA.

IN a very readable book on the psychology of neurasthenics[7] Dr. PAUL HARTENBERG describes and classifies the various states of consciousness commonly met with in cases of neurasthenia. Before doing so, however, and in order to explain the underlying unity of mechanism producing symptoms so varied as those exhibited by this disorder, the author exposes his own theoretical conceptions of the nature of neurasthenia. This may be put in one sentence: Neurasthenia is, for Dr. Hartenberg, the expression of a diminished activity of nervous matter, variously produced. It is a nervous disorder of which fatigue is the essential stigma and criterion. Dividing the symptoms into physical and psychical, the author considers under the latter heading not only simple psychical asthenia and states of mental and emotional depression and volitional insufficiency, but psychic complications, including phobias, tics, impulses, obsessions, sexual perversions, hypochondria, and melancholia. To all of these mental complications Dr. Hartenberg attaches a certain importance, but he is careful to point out that, notwithstanding their frequent appearance, neurasthenia is not a mental malady—that is, the mental troubles are neither primitive nor essential, but are only the conscious reflection and appreciation of disordered working of the entire nervous system, neurasthenia being thus the expression of a diffuse disorder of neural activity and not a disorder of ideal association or a *maladie par représentation*. Neurasthenia is thus sharply defined from hysteria, which is a *maladie par auto-suggestion*, and also, for the same reason, differs in nature from psychasthenia and melancholia. In these latter states the physical condition is the objectivation of a mental state; in neurasthenia the mental condition is the reflection of a physical state. In applying the general principles of neurasthenia to the appearance of phobias, obsessions, etc., the author assumes in each of these cases a constitutional cerebral defect—that is, that psychasthenia is the "neurasthenia of the degenerate." Though somewhat of a misnomer—for the book is by no means a thorough psychological study—we can commend Dr. Hartenberg's work as an interesting exposition of the symptomatology of neurasthenia.

[7] *Psychologie des Neurasthéniques*. By Dr. Paul Hartenberg. Paris: Félix Alcan. 1908. (Cr. 8vo, pp. 248. Fr.3.50.)

Dr. BÉNI-BARDE, who is the author of several works on hydrotherapy in the treatment of diseases of the nervous system, has composed a work of considerable size upon neurasthenia,[8] which is to form the first of a series of clinical works, the subsequent volumes to deal successively with hysteria, exophthalmic goitre, psychasthenia, etc. After examining the numerous causes of neurasthenia, and after giving a general description of its symptomatology and the three classes—essential, peripheral or reflex, and prodromal or symptomatic—into which he divides this disorder, Dr. Béni-Barde, at great length and with an infinity of detail, discusses the individual bodily disturbances which appear to act as immediate exciting causes; their relation to the neurasthenic condition, and the indications afforded for treatment, with particular reference to hydropathic treatment, of which he is a strenuous and eloquent advocate. In conclusion, after reviewing and criticizing the whole of the various theories—nervous, nutritive, toxic, traumatic, and so on—which have been advanced to explain its pathogenesis, the author gives his own conclusion in the very general statement that "neurasthenia consists of a perturbation of the function devolving upon encephalic zones," which, at first indefinite in its effects, begins by disturbing the "functional irritability" inherent in the divers tissues and zones, and ends by injuring the "nutritive irritability" on which depends cellular regeneration. Which form the neurasthenia may take depends on the combination and interplay of inherent or constitutional and extrinsic or environmental conditions, these deciding the essential, cerebral, or psychic form (cerebrasthenia or psychasthenia); or the cerebro-spinal form; or the cardio-vascular, or gastro-intestinal forms, etc., as the case may be. In all cases the author praises the advantages of hydrotherapy, in particular when combined with psychotherapeutic measures, but otherwise his book is not very enlightening.

[8] *La Neurasthénie. Les vrais et les faux neurasthéniques*. By Dr. Béni-Barde. Paris: Masson et Cie. 1908. (Roy. 8vo, pp. 500. Fr.8.)

RADIO-ACTIVITY.

THE public interest taken in radium and in the group of phenomena classed together as radio-active serves as a sufficient excuse for the appearance of Mr. C. W. RAFFETY'S introduction to the subject.[9] Its chief claim to merit is its striking sanity. The author has been particularly careful to eliminate all matter that is sensational and disputed, and he has carried this principle so far as to exclude from his account of the subject the transmutation of copper into lithium that has been claimed to be an effect of the action of radium. For several other reasons besides its sanity the book will prove popular. It contains a clear, straightforward account of the subject, explaining how the discoveries have been made, what is their bearing on modern theories as to the constitution of matter, and how the phenomena may be observed. In dealing with the spinthariscope, the highly suggestive remark is made that the instrument affords the observer probably the only distinct existing opportunity of watching for himself directly the action of the individual atom. Clear expression is given to the differences existing between the various rays, and readers will be grateful to Mr. Raffety for having added for reference a short appendix summarizing their properties and giving tables of the periods of the radio-active elements. The closing pages of the book are taken up with a description of some of the simpler experiments feasible with inexpensive apparatus. Hints are given to those who wish to lecture on radium as to the precautions they must take to ensure success. The book, in fact, without being brilliant, is a sound and most readable popular treatise on radio-activity. But why will Mr. Raffety interpose adverbs between the constituent parts of his infinitives?

[9] *An Introduction to the Science of Radio-Activity*. By Charles W. Raffety. With illustrations. London: Longmans, Green and Co. 1909. (Post 8vo, pp. 220. 4s. 6d.)

PHYSIOLOGICAL CHEMISTRY.

ALTHOUGH it is only about two years since Professor EMIL ABDERHALDEN published the first edition of his *Lehrbuch*, the second edition[10] is now to hand. One tribute to the

[10] *Lehrbuch der physiologischen Chemie, in zwei und dreissig Vorlesungen*. By E. Abderhalden. Second edition. Berlin and Vienna: Urban and Schwarzenberg. 1909. (Sup. roy. 8vo, pp. 984, 19 illustrations. M.24.)

excellence of the book is the fact that it has been translated into English; the early appearance of a second edition is another. We need say no more about it than that the work is thoroughly up to date, and that its author is eminently well qualified to write an authoritative textbook; the matter, moreover, is presented in a clear and readable form.

Another work from the same pen is also before us.[11] It deals with recent researches in the chemistry of proteins, in which region of science we owe so much to Professor ABDERHALDEN himself. It does not treat of all the problems concerning proteins, but merely of their pure chemistry. The booklet is a reprint of the chapter Professor Aberhalden contributed to the more ambitious textbook which is appearing in fasciculi under the editorship of Dr. Carl Oppenheimer, and which has been already noticed in these columns. In that publication other aspects of proteins (biological, etc.) are contributed by other authors. Many readers, however, will find it convenient to have Professor Abderhalden's excellent article in separate form.

But it is not only Germany which is prolific in publications of this kind just now. Three more of the monographs on biochemistry which Messrs. Longmans are publishing have just made their appearance. Two of these are written by Dr. R. H. ADERS PLIMMER, and both deal with the *Chemical Constitution of the Proteins*,[12] Part I with their cleavage products and Part II with the attempts made to synthesize them from their cleavage products. The work traverses much the same ground as in Abderhalden's smaller book just noticed, and those that buy the one will not require the other. Dr. Plimmer has also the gift of clear exposition, and the work is fully abreast of recent advances in science. It is particularly well suited for English-speaking students and researchers, and we note with satisfaction that the terminology adopted is that recommended by the Protein Nomenclature Committee of our physiological and chemical societies acting in conjunction with a similar committee in America.

The third monograph deals with *The General Characters of the Proteins*, and is written by Dr. S. B. SCHRYVER.[13] The characters included are physical (solubilities, crystallization, optical activity, heat coagulation, and the like), chemical (tests, protein compounds, oxidation products, distribution of nitrogen, etc.), and biological (precipitin reactions). The whole forms a useful and lucid contribution to protein literature.

The French contribution before us deals with the synthesis and constitution of proteins,[14] but is not more than a pamphlet. It gives in outline an account of protein constitution, dealing mainly, of course, with the more recent acquisitions to knowledge on this subject, the importance and interest of which is manifested by so many publications in different languages relating to it.

Furthermore the twelfth and thirteenth fasciculi of OPPENHEIMER'S *Handbuch*[15] are just to hand. Dr. Franz Müller deals in several articles with animal pigments (of blood, bile, urine, etc.); Professor von Fürth with melanins and similar pigments; F. Samuelz with various products of protein cleavage; and Wolfgang Ostwald with the general characters of colloids.

THE CAUSATION OF SEX.

IN a monograph entitled *The Causation of Sex*,[16] Mr. E. RUMLEY DAWSON claims to have solved the problem of sex causation and to have formulated a new theory. The theory consists of two parts; the first is that sex is not due to the male but to the female parent, and the second that the right ovary produces male and the left female ova. So far as the first part of his theory is concerned the author may claim priority, for he put it forward in 1900, but in urging this point he does not stand so entirely alone as he seems to imagine, for in a paper entitled, The Determination of Sex in Animal Development, which appeared in 1902, Dr. J. Beard makes the following statement: "The determination of sex for the next generation thus lies with germ cells of the female metazoan organism," but the data on which he bases the opinion are quite different from those upon which Mr. Rumley Dawson depends. The second part of the theory had practically been stated, before Mr. Rumley Dawson's first communication on the subject, by Dr. Tuckey. Mr. Dawson insists that Dr. Tuckey did not dissociate the male parent from any part in sex causation, but when he came to the conclusion that boys were derived from the right and girls from the left ovary he could scarcely have ascribed much potency in sex production to the father. A further point upon which Mr. Dawson insists is the alternate action of the two ovaries, and as regards this he is in conformity with the opinion of Negrier, and the idea has also obtained support from the observations of other inquirers. If the contentions that the ovaries produce ova of opposite sexes and that the ovaries act alternately are well founded then it might be possible to foretell the sex of a coming child, the sex of the previous child, the date of its birth, and the reappearance of menstruation in the mother being known. The plan Mr. Dawson adopts is to go forty weeks back from the last child's birthday to find the month in which the ovum was fertilized which yielded the child. The sex of that child being known, proceed alternately from the month in which the ovum from which it grew was fertilized to the tenth ovulation period prior to the expected month of the birth of the coming child, allowing an extra or thirteenth ovulation between December and the January of the following year, because there are thirteen ovulations per annum. Using this rule, Mr. Dawson claims to have had 97 per cent. of successes, and the 3 per cent. of failures he attributes to the inability of the mothers to forecast correctly the month of confinement. If other observers, using the data, are equally successful, there will be much to be said for his theory, but it is certainly not proved by the anatomical, physiological, and pathological data Mr. Dawson uses to support it, nor is his case strengthened by the one-sided way in which he uses the evidence at his disposal.

NOTES ON BOOKS.

DR. PRICE-BROWN is a physician of Toronto who finds relaxation from the strenuous life of a practitioner of medicine, who has to battle with facts, in wooing the Muse of Fiction. *In the Van*[17] is a pretty story of a wife's devotion. The scene is laid in Canada during the war of 1812 between England and the United States, and the plot is merely the story of the foundation of an English military settlement on the shores of Lake Huron. Helen Manning, the wife of a young Peninsular officer, insists upon accompanying her husband when his regiment is ordered to America, and though she is the only lady in camp she follows the men in the long march from Halifax to Georgian Bay on Lake Huron, and braves all dangers and discomforts to remain by her husband's side whilst the fort is being built. The tale is told partly in the form of Helen's diary, and is principally an account of her adventures whilst in camp and on the march, when she cheers the men and wins all hearts by her sweetness and courage. A second story, the love story of a girl hesitating between her two lovers, a Canadian and an Englishman, is introduced, but the plot is very slight. Dr. Price-Brown seems more at home when he is writing of his native forests and lakes and describing the terrors of a Canadian winter than he is when telling a story. The chief interest of the book lies in the descriptions of Canadian life and scenery, which are excellent. The character drawing, on the contrary, is not so good, and the language is a trifle too modern, not to say slangy, for the early days of the last century; ladies of that time did not speak of something being "just lovely." or

[11] *Neuere Ergebnisse auf dem Gebiete der speziellen Eiweisschemie.* By E. Abderhalden. Jena: Gustav Fischer. 1909. (Sup. roy. 8vo, pp. 128. M. 3 50.)

[12] *Monographs on Biochemistry.* Edited by R. H. Aders Plimmer and F. G. Hopkins. *The Chemical Constitution of the Proteins.* By R. H. Aders Plimmer. In two parts. London: Longmans, Green, and Co. 1908. (Royal 8vo, pp. 112 and 78 respectively. 3s. and 2s. 6d. respectively.)

[13] *Monographs on Biochemistry. The General Characters of the Proteins.* By S. B. Schryver, Ph.D., D.Sc. London: Longmans, Green, and Co. 1909. (Royal 8vo, pp. 86. 2s. 6d.)

[14] *Les Actualités chimiques et biologiques.* No. 10. *Synthèse et Constitution des albuminoïdes.* By M. Emm. Pozzi-Escot. Paris: Jules Rousset. 1909. (Post 8vo, pp. 110. F. 1 50.)

[15] *Handbuch der Biochemie.* Edited by Carl Oppenheimer. Twelfth and thirteenth Fasciculi, concluding Vol. I. Jena: G. Fischer. 1909. (M. 5 per fasciculus.)

[16] *The Causation of Sex.* By E. R. Dawson. London: H. K. Lewis. 1909. (Demy 8vo, 208 pages; 21 figs. 6s.)

[17] *In the Van; or, The Builders.* By Price-Brown (Eric Bohn), author of *How Hartman Won*, etc. Illustrated by F. H. Brigden, U.S.A. Toronto: McLeod and Allen. (Pp. 352.)

"awfully jolly." But there is a charming sketch of a French Canadian, Bateese, whose broken talk and quaint old songs, half-English, half-French, are delightful. It is a pleasant story pleasantly told, and it points a useful moral. It brings home to the present-day English people what our colonies have cost us in the past, and what English men and women have suffered in helping to found and to retain them.

In his little book on the *Cure of Rupture by Paraffin Injections*,[18] Dr. MILLER describes the method of injecting paraffin into the loose tissue surrounding the sac. The author fails to convince us that this method is destined, as he thinks, to play an important part in the surgical treatment of reducible hernia. Most readers will be disposed to regard it as crude and uncertain, and an impression that it is by no means simple nor, indeed, quite free from danger, is suggested by the statement that "only the operator who is thoroughly acquainted with the manner of disposition of paraffin should attempt the injection of hernia." The clinical report at the end of the book is far too scanty and incomplete to warrant any definite conclusions on the results of this treatment.

The pains taken by Dr. BRICKNER and his colleagues to extend and to improve still further their *Surgical Suggestions*,[19] will, there can be no doubt, secure for their work a continuance of the favour it has hitherto received from American surgeons. This handy volume is truly, as is claimed, "packed full" of information, and this, though to English readers it may seem here and there to be strange and somewhat erratic, will, on the whole, be found very useful and in accordance with the latest principles of surgical practice. It is essentially a work for experienced surgeons, and not a mere collection of hints on elementary matters.

We have received the new edition of *Mrs. Beeton's Cookery Book*[20] printed from new type, and revised throughout. English cookery has always been strong in plain sweets and weak in vegetables, and the editors of the new edition have endeavoured to improve the recipes for the cooking of vegetables without prejudice to the recipes for puddings. The book, which is still moderate in price (1s.), has been enlarged, and contains a number of coloured illustrations.

[18] *The Cure of Rupture by Paraffin Injections.* By Charles C. Miller, M.D. Chicago: Oak Printing Co. 1908. (Cr. 8vo, pp. 81. $1.00.)
[19] *Seven Hundred Surgical Suggestions.* Practical Brevities in Surgical Diagnosis and Treatment. By Walter M. Brickner, B.S., M.D., Assistant Adjunct Surgeon, Mount Sinai Hospital, New York; Eli Moschcowitz, A.B., M.D., Assistant Physician, Mount Sinai Hospital Dispensary, New York; and Harold M. Hays, M.A., M.D. Third Series. New York: Surgery Publishing Company. 1909. (Cr. 8vo, pp. 158. 1 dol.)
[20] *Mrs. Beeton's Cookery Book.* New edition. London: Ward, Lock and Co. 1909. (Cr. 8vo, pp. 368. 1s.)

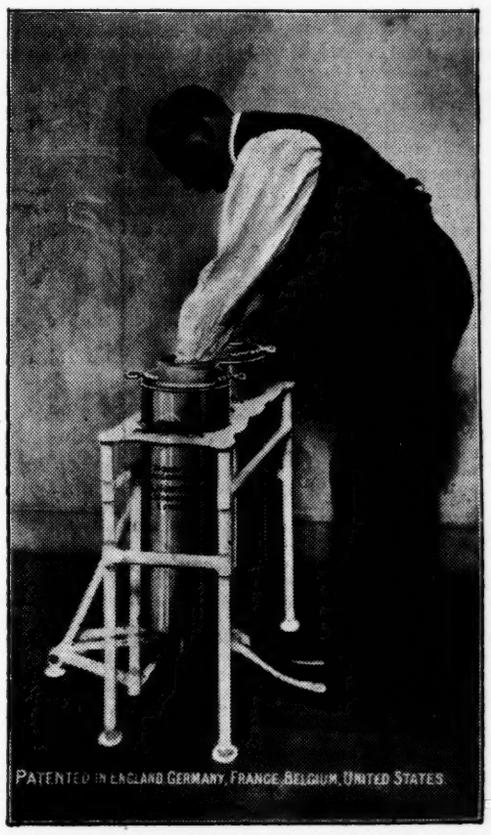
MEDICAL AND SURGICAL APPLIANCES.

Saline Infusion Indicator.

MR. R. DOUGLAS LAURIE, M.B., Ch.B.Edin., House-Physician, Royal Hants County Hospital, Winchester, writes: In the administration of saline continuously either per rectum or beneath the skin, the great difficulty lies in knowing whether at any given moment the fluid is flowing, and if so, at what rate. To overcome this I have made the indicator, which is put in circuit with the rubber tube leading from the saline reservoir to the patient. The tube is so constructed that it encloses a volume of air which can neither escape upwards to the reservoir, nor downwards to the patient, but does not hinder the flow of the fluid. It consists of a narrow glass tube sealed into the upper end of a larger tube, and projecting towards the centre of the latter. As the saline flows, drops are formed on the end of the inner tube, and the fall of these indicates the rate of flow. The inner tube is of such a size that each drop is approximately one minim, and by thus counting the drops per minute the rate of flow can readily be estimated. (The number of drops per minute divided by 8 gives the rate in ounces per hour.) The indicator should be connected with the rubber tubing shortly after it leaves the reservoir, and in such a position that it can hang vertically. A clamp (preferably a screw clamp) is placed on the rubber tubing just above the indicator, and the flow regulated by this. The indicator is of glass, and can readily be sterilized in carbolic. Messrs. Allen and Hanburys, Limited, supply the indicator at 12s. per dozen.

An Auto-Gloving Machine.

In connexion with the exhibition of new appliances at Sheffield last year brief allusion was made to an auto-gloving device on view. Since then the makers, Messrs. Hoefftcke, of 21, Woodstock Street, W., have made a material alteration in its manufacture, with the result that it is now in every respect an admirable piece of theatre furniture. As will be gathered from the accompanying woodcut, it consists of a vertical cylinder, with an opening just large enough to admit of ready insertion of the hand and wrist. The sterilized glove is hung in the opening with its wrist-piece turned over the edge of it. The operator presses a foot lever, which action results in the instant formation of a vacuum in the cylinder. The



glove responds, and, thanks to its elasticity, dilates evenly in all its parts, so that the hand slips in without difficulty. The hand in place, the lever is released; the vacuum disappears, and in a flash the hand is neatly gloved. The whole operation, whether the hands are wet or dry, hardly takes five seconds. Though the whole apparatus takes to pieces and can be sterilized, the makers have thought it well to protect the gloves from all possible contact with the interior of the machine by providing a bag which hangs down inside the cylinder from a false collar at its upper opening. This, of course, can be taken out, sterilized, and replaced as often as desired. The apparatus shown in the engraving is to glove both hands simultaneously, but single gloving machines are also supplied.

RURAL AND COUNTY NURSING ASSOCIATIONS.

WE have published recently several letters under the general heading of "Rural Nursing Associations" in which the writers have given instances of defects in the organization and administration of rural nursing associations. The matter is at present under the consideration of the Medico-Political Committee, which we understand will report at an early date; meanwhile it appears to be advisable to print for the information of members the new rules which the Queen Victoria's Jubilee Institute for Nurses suggests for the guidance of local rural nursing associations. We may add that Rule 9 has been formulated largely in consequence of representations which

have been made to the Queen Victoria's Jubilee Institute Nurses on behalf of the medical profession.

QUEEN VICTORIA'S JUBILEE INSTITUTE FOR NURSES.

Suggested Rules and Information for Local Associations employing Village Nurses.

1. The Association includes the parishes of and is in affiliation with the County Nursing Association.

2. The nurse will work under the Committee of the Association, and will be under the supervision of the County Superintendent. If a midwife she will be also under the inspection of the local supervising authority as laid down by the Central Midwives Board.

3. The services of the nurse may be secured by payment of an annual subscription on the following scale:

Labourers (wages not exceeding 20s. per week), 2s. per annum.
Artizans and small tradespeople, 3s. 6d. to 4s. per annum.
Tradespeople and farmers, 5s. to 10s. per annum.
or, Working people may secure the services of the nurse on payment of 2d. per month for single people, and 4d. per month for a family including aged relatives living with and dependent on the family.

Tradespeople and farmers may employ the nurse for a subscription of 5s. to 10s. per annum, except for midwifery.

4. Subscribers of less than 5s. per annum may engage the nurse as midwife at a fee of not less than 5s. (Arrangements as to the nurse taking midwifery work are subject to the wishes of the Committee of each Association.)

Monthly nursing is (free) *or* (subject to an extra charge of 2s. to working people earning under 20s. a week).

A charge for monthly nursing of (3s. 6d. to 5s.) is made to those subscribing 5s. and under to the Association. Notice of (2) *or* (3) months must in any case be given to the (nurse) *or* (Honorary Secretary) and the charge prepaid.

Other charges by arrangement.

5. Night duty is not expected of the nurse, except in critical cases, when a small charge (4d. to 1s. 6d.) may be made, or in maternity cases, which are free.

6. The nurse's services, if not required for *subscribers*, may be supplied to *non-subscribers*, but only *at higher rates* (to be fixed by the Committee).

7. The nurse will attend cases daily when necessary.

8. The nurse will not attend infectious cases. (The County Association will, when possible, arrange to supply a nurse on terms to be arranged between the County and local Association for any case of emergency or special difficulty, and also for holiday work.)

9. In all cases of general sick nursing the attendance of the nurse must be sanctioned by the medical man, it being understood that her attendance on such cases does not interfere with her engagements to lying-in women. When she has anything to communicate to the doctor she shall do so in writing, and it is hoped the doctor will do the same to avoid leaving verbal messages with patients or their friends.

The nurse may attend a patient on application or in emergency, but must not continue to visit without a medical man being informed. Should the nurse advise the patient to have a doctor and the patient refuse, the nurse may no longer attend this patient except in case of urgency. She must in any case report the matter to her Secretary.

10. The nurse when on duty will wear the uniform dress and no ornaments. No presents or beer, wine, or spirits of any kind may be accepted by her.

11. The nurse is strictly forbidden to interfere in any way with the religious opinions of her patients or their friends, and she shall consider as strictly confidential all matters which shall come to her knowledge concerning her patients. She is not allowed (except in cases of immediate necessity, which should be reported at once to the Honorary Secretary) to provide nourishment or relief.

12. It is the nurse's duty to do all that concerns the person and bed of the patients, and she is responsible for their personal cleanliness. She must see the room is ventilated and cleaned, and do her best to improve the general surroundings. When the relations of the patient can be taught how to keep the room in nursing order they should be encouraged to do so.

13. The nurse shall not, as a rule, be required to be on duty more than eight hours daily, and on Sundays she will only attend urgent cases. She is entitled to (one month's) *or* (three weeks') holiday yearly, the date to be fixed by the Committee.

14. The nurse will keep a register of her patients for the Committee and send a report of her own work as required to the County Superintendent on the forms provided. It is suggested that one of the Honorary Secretaries with one of the ladies of the Committee should see the nurse and inspect her books one afternoon each week.

The nurse shall be responsible to the Committee for all appliances and garments lent to patients being returned in good order.

15. The nurse must be punctual in going to her work, keeping a register of her times in the book provided for the purpose. She must leave word at her rooms (on a slate provided for the purpose) where she is likely to be found in case of emergency, and the approximate hour of her return.

16. Applications for the services of the nurse may be made to her. Applications for the nurse's services should be made as early as possible in the day.

PISTOIA GOUT POWDERS.

There was a powder for gout known to an earlier generation under the name of the "Portland Gout Powder." This, according to the prescription given by Jourdan in the *Pharmacopée Universelle* (1828), consisted of Gentian root, round birthwort root (*Aristolochia rotunda*), ground pine root (*Teucrium chamaepitys*), the tops of germander (*Teucrium chamaedrys*), and of the lesser centaury (*Erithroea centaurium*), of each equal parts to be ground separately to a fine powder and mixed; dose, half a teaspoonful. Jourdan gives of this three variants, in one of which the gentian is replaced by guaiacum.

For some years past a good deal has been heard about the Pistoia gout powders. A pamphlet entitled *The antigouty powders of the R.R. Benedictine Mothers of Pistoia for the treatement of a gouty source* (Rome, 1904) presents a curious resemblance to the advertising pamphlets issued by ordinary nostrum dealers. There is a short disquisition on gout written in very odd English; this is followed by a translation of a large number of testimonials to the virtues of the powder, and this again by the following "Warning to our Customers":

> Having known that in some towns of Italy, and even in Pistoia, some antigouty drug circulates under the name of "Vegotal Antigouty Powders of the Cloister" or under other names alike, making every body trust that they come from our Monastery, we think ourselves, in duty bound, to remember to our Customers that no deposit of our Antigouty Powders is to be found neither in Pistoia nor in other towns or places in Italy or abroad, and that we have accorded to nobody the faculty of preparing or selling them.
>
> Consequently every antigouty remedy which in any way should be made known as coming from this Monastery, must be considered as a product of vulgar falsification and adulteration.

The label on some boxes of the powder states that it is based on gentian and Indian wood which is one of the synonyms of guaiacum.

The pamphlet, which has already been quoted, states that the powders do not contain colchicum, belladonna, or any other poisonous substance, but

> are a composition of medicinal grasses, none of which can ever have a pernicious effect upon the health, whatever may be the state of the person who uses it.

It is asserted that "often many miraculous cures are obtained," but it appears that the treatment must be a prolonged one, for the pamphlet further states that:

> When it is question of a first affection or of a light gouty attack, the treatment of a whole year without interruption can in general be sufficient; because it is necessary for the blood to stay under the action essentially depurative of the drug during four seasons.
>
> But when the illness is old, a year of treatment cannot of course be enough to extirpate entirely the distempor, and the use of the drug must be protracted till necessary.

MM. Guignard, Collin, Chastaing, and Barillot give the following formula for the Pistoia gout powder:

I.

Colchicum corm	10 parts
Bryony root	10 ,,
Betony (root, stem, and leaves) ...	50 ,,
Gentian root...	10 ,,
Camomile (chiefly stem, leaves, a little root, and flowers)	10 ,,

M. Collin is one of the leading authorities on the microscopic characters of powdered vegetable drugs, and on examination of a specimen of the powder which recently came into our hands it showed characters consistent with this formula; such small differences as were observed were only such as might be expected between specimens grown under different conditions of soil, climate, etc.

Another formula which has been published for the powders is as follows, but the sample we examined agreed more nearly with No. 1:

II.

Colchicum corm	20 parts
Bryony root	10 ,,
Betony root	40 ,,
Gentian root...	10 ,,
Camomile	10 ,,

"THE CHILDREN'S CHARTER."

THE Children Act, 1908, which came into force on Thursday last, has been well called "the children's charter." The Act extends, and to some extent codifies, previous Acts dealing with children, and repeals many clauses in other Acts. The new Act is divided into six parts:—

1. Infant life protection.
2. The prevention of cruelty to children and young persons.
3. Juvenile smoking.
4. Reformatory and industrial schools.
5. Juvenile offenders.
6. Miscellaneous and general.

INFANT LIFE PROTECTION.

Under the Infant Life Protection Act, 1897, only foster parents who received more than one infant under the age of 5 years were brought under inspection. The new Act applies to an infant in single care and extends the age to 7 years. Its first clause is as follows:

1. Where a person undertakes for reward the nursing or maintenance of one or more infants under the age of 7 years apart from their parents or having no parents, he shall, within forty-eight hours from the reception of any such infant, give notice in writing thereof to the local authority.

The foster parent who changes his or her residence must give notice to the local authority within forty-eight hours, and within the same period must give notice of the death or removal of any infant previously under his or her care, and within twenty-four hours must give notice of death to the coroner. Any person failing to give due notice in any case will be guilty of an offence, and if the maintenance of the infant has been paid for in whole or in part by a lump sum, it or any part of it will be liable to forfeiture. Statutory obligation is laid upon every local authority to provide for the execution of this part of the Act, and if on inquiry it appears that there are any persons who undertake the nursing and maintenance of such infants the local authority must appoint infant protection visitors, who shall satisfy themselves as to the proper nursing and maintenance of the infants and give necessary advice or directions. The visitor will have authority to apply either to a justice or to the local authority for an order directing him to remove an infant to a place of safety if it appears that the infant is being nursed in overcrowded, dangerous, or insanitary premises, or by a person who by reason of negligence, ignorance, inebriety, immorality, criminal conduct, or other similar cause, is unfit to have care of it. Foster parents are forbidden to insure the life of a nurse-child, and an insurance company which issues a policy on the life of such an infant will be guilty of an offence. Persons guilty of an offence under this part of the Act will be liable on summary conviction to imprisonment for a term not exceeding six months, or to a fine not exceeding £25. The local authority may exempt from inspection institutions maintained by a philanthropic society or any particular premises within their district which appear to them to be so conducted that it is unnecessary that they should be visited.

PREVENTION OF CRUELTY TO CHILDREN AND YOUNG PERSONS.

The first section of the second part of the Act applies to any person over the age of 16 years who has the custody, charge, or care of any child or young person. If such a person assaults, illtreats, neglects, abandons, or exposes a child or young person, or allows a child or young person to be treated in a manner likely to cause unnecessary suffering or injury to health, including mental health, such person shall be guilty of a misdemeanour, and shall be liable (*a*), if convicted on indictment, to a fine not exceeding £100, or to imprisonment, with or without hard labour, for any term not exceeding two years, or to both penalties; or (*b*), on summary conviction, to a fine not exceeding £25, or imprisonment for a term not exceeding six months, either or both. It is further provided that a parent or other person legally liable for the maintenance of a child or young person shall be deemed to have neglected him in a manner likely to cause injury to his health if he has failed to provide adequate food, clothing, medical aid, or lodging, or, if unable to make such provision, if he fail to take steps to procure the same under the Poor Law. A person may be convicted of an offence under the section notwithstanding that the actual suffering or injury to health has been obviated by the action of another person, or notwithstanding that the child has died. If it be proved that a person convicted under this section was directly or indirectly interested in the insurance of the child or young person, the penalties are increased to a fine of £200, or penal servitude for five years on conviction on indictment; in the case of summary conviction, the court, in determining the sentence, shall take into consideration the fact that the person was interested in the insurance.

SUFFOCATION OF INFANTS.

The following is the clause with reference to overlying:

Where it is proved that the death of an infant under 3 years of age was caused by suffocation (not being suffocation caused by disease or the presence of any foreign body in the throat or air passages of the infant) whilst the infant was in bed with some other person over 16 years of age, and that that other person was at the time of going to bed under the influence of drink, that other person shall be deemed to have neglected the infant in a manner likely to cause injury to its health within the meaning of this part of this Act.

BURNING.

If a person in charge of a child under the age of 7 years allows it to be in any room containing an open fire not sufficiently protected to guard against the risk of burning or scalding without taking reasonable precautions, and the child is killed or suffers injury, he or she is made liable on summary conviction to a fine not exceeding £10.

BROTHELS: PROSTITUTION.

A person having the custody, charge, or care of a child or young person between the ages of 4 and 16 years who allows it to reside in or frequent a brothel is liable to a fine of £25, or imprisonment for not more than six months, or to both penalties. Any such custodian who causes or encourages the seduction or prostitution of a girl under 16 is liable to imprisonment for any term not exceeding two years, and he shall be deemed to have encouraged such seduction or prostitution if he has allowed her to consort with or enter or continue in the employment of a prostitute or a person of known immoral character.

A constable may take into custody without warrant any person who within his view commits an offence under this part of the Act, or who the constable has reason to believe has committed such an offence, and the constable or any person authorized by a justice may take to a place of safety any child or young person in respect to whom such an offence has been, or there is reason to believe has been, committed.

HABITUAL DRUNKARDS.

If it appears to the court before which any person is convicted of an offence of cruelty under the Act, that he or she, being the parent of the child or living with the parent of the child, is an habitual drunkard, the court, in lieu of sentencing the person to imprisonment, has power to order his or her detention in a retreat under the Inebriates Acts, provided that the person consents.

A board of guardians, and in London a local authority, is given power to institute proceedings under this part of the Act.

JUVENILE SMOKING.

The sale of cigarettes or cigarette papers to a person under the age of 16 years is rendered illegal, and the seller is subject to a penalty not exceeding £2 for the first offence, £5 for the second, and £10 for a third or subsequent offence. A court of summary jurisdiction may direct the removal of an automatic machine supplying cigarettes. A person will not be guilty of an offence for selling tobacco other than cigarettes to a person under the age of 16 years if he did not know and had no reason to believe that it was for the use of that person; but the Act will apply to smoking mixtures intended as a substitute for tobacco in like manner as to cigarettes.

REFORMATORY AND INDUSTRIAL SCHOOLS.

The object of this part of the Act is to enable courts to deal with youthful offenders without sending them to prison. A youthful offender between 12 and 16 years of age may be committed by the court to a certified reformatory school. The court will also have power to

send to a certified industrial school any child apparently under the age of 14 years who is found begging, wandering without home or place of abode or destitute, under the care of a parent or guardian of criminal or drunken habits, or who frequents the company of any reputed thief. A parent unable to control a child may take advantage of this section to obtain his committal to an industrial school.

Juvenile Offenders.

A court of summary jurisdiction, when hearing charges against children or young persons, must in future sit either in a special building or room, or on a different day to that on which ordinary sittings are held. A court is given very large discretion in dealing with a charge and inflicting punishment in the case of a child or young person. In future no child or young person—that is to say, no person under 16—can be sentenced to death. No child—that is to say, no person under 14—shall be sentenced to imprisonment or penal servitude, and no young person—that is to say, no person under the age of 16—shall be sentenced to penal servitude.

Alcohol.

Section 119 runs as follows:

> If any person gives, or causes to be given, to any child under the age of 5 any intoxicating liquors, except upon the order of a duly qualified medical practitioner, or in case of sickness, or apprehended sickness, or other urgent cause, he shall, on summary conviction, be liable to a fine not exceeding three pounds.

Section 120 excludes children from the bars of licensed premises, and imposes a penalty of forty shillings for the first offence, and £5 for any subsequent offence, not only on the licensee, but also on any person who causes or procures, or appears to cause or procure, a child to go to or to be in the bar of licensed premises during such hours as the bar is open.

Verminous Children.

Section 122 empowers a local education authority to direct its medical officer or any person deputed by him, to examine the person and clothing of a child in a public elementary school, and if such child is found infected with vermin, or in a foul or filthy condition, the parent or guardian may be ordered to cleanse the person and clothing of the child within twenty-four hours; if the parent or guardian fail to obey the order, the medical officer or his deputy may remove the child, and cause its person and clothing to be properly cleansed.

Determination of Age.

While a court is required to take such evidence as may be forthcoming with regard to the age of a child, it is given power to presume the age.

Application to Scotland and Ireland.

Sections 132 and 133 are concerned with the modifications necessary to apply the Act to Scotland and Ireland.

THE COMPENSATION ACT AND MEDICAL REFEREES.

During the course of an interesting discussion of the Workmen's Compensation Act, which recently occupied the members of the Medico-Legal Society, certain interesting points were brought out as to the present law relating to medical referees. Dr. R. J. Collie observed that as the Act now stands a county court judge may only refer a matter to a medical referee on application to the court "by both parties." He suggested that the words "either party" should be substituted. In his view this change would be followed by "a huge slump in bogus cases, in hard swearing, in prolonged litigation, and in the degradation of the working classes." According to Dr. Collie, it is the man who has a bad case who refuses to allow it to be referred to a medical referee. He cited many instances in which, by the astuteness of the medical examiner, the fraud and the malingerer had been detected. One of these was particularly amusing. A man complained of an injury to his back caused by an accident. Accompanied by his wife, he visited a medical man retained by his employer, and told him that he had no feeling over a particular area of his back. The examiner applied a slight charge of electricity to the area in question. The patient said he did not feel it. The charge was gradually increased until the malingerer, unable to bear the pain any more, uttered a loud cry, and curled up on the floor. His wife rushed into the room to see what was the matter, when the doctor said, "See! I have cured your husband by electricity." This the patient did not deny. He went back to work at once.

Dr. Morley, too, instanced one striking case to show how easily fraud on the part of a workman may be detected by a medical man. A dock labourer alleged that, owing to a blow on the head, he had become totally blind. The employer's medical man was given permission to see him in the robing room of a county court, whither the applicant was "led" by his wife. For the purposes of examination, the doctor asked the patient to remove his collar and tie. While the man's attention was distracted, the doctor knocked his stud on the floor. He then, with the ostensible object of testing the man's eyesight, dropped a match on the carpet, and asked the patient to pick it up. The patient professed to be unable to do so, but subsequently, when his attention was off the matter, he picked up his stud with the greatest ease! Needless to say, his application for compensation was dismissed.

With regard to the appointment of medical referees and assessors, it seems to be thought, both by lawyers and doctors, that the law requires amendment. At present a judge may, if he thinks fit, appoint a medical assessor to sit with him. Dr. Collie would so alter the Act as to provide that the judge shall, on demand of either party, summon a medical assessor to sit with him. At present some county court judges seldom or never make use of the power which is vested in them. One member of the medical profession said that he had been a medical assessor for nearly ten years, and had never yet been called on to act.

Three county court judges who took part in the discussion made various suggestions on the subject.

His Honour Judge Smyly said:

> It would be a great assistance in every case if a medical referee were present. . . . I have suggested that medical questions should go to the medical referees before they come to the judge at all.

Judge Bray said:

> There are cases in which I am not sure that the medical assessor would be of much assistance, and where it would be a farce to disregard the medical evidence and accept absolutely the opinion of the medical assessor. There is, however, a great deal of untruthful medical evidence given which the judge is really not in a position to appreciate at its true value.

Judge Howland Roberts said:

> I have derived the greatest assistance from having a medical assessor sitting with me, but it does not do for the judge to lean entirely on the medical assessor, because he ought to be guided to some extent by the medical evidence.

It would seem from these expressions of opinion that the county court judges themselves take the view that assessors should be more frequently appointed. How is the judge to know that there are medical issues until the case is actually before him? If he then decides that the question is one which an assessor should help him to solve, there must be an adjournment at the expense of the parties. It is difficult to understand the attitude taken up by a judge who refuses to call in an assessor when occasion demands. An assessor can detect the medical witness who is "prepared to stretch a point" when the judge cannot.

It is hoped that should the Medico-Legal Society make representations to those in authority with regard to the amendment of the Compensation Act, it will call particular attention to the position of the medical referee.

The Congress of French-Speaking Alienists and Neurologists will hold its nineteenth meeting this year at Nantes under the presidency of Dr. Vallon. Among the subjects proposed for discussion are chronic forms of chorea, to be introduced by Dr. Sainton, of Paris; and lunatics in the army from the medico-legal point of view, to be introduced by Drs. Granjux of Paris and Rayneau of Orleans.

REPORT

OF THE

Royal Commission on the Poor Laws and Relief of Distress.

REPORT BY DR. J. C. McVAIL.

DR. J. C. McVAIL, county medical officer for Stirlingshire and Dumbartonshire, undertook at the request of the Royal Commission to inquire into and report on the methods and results of the present system of administering indoor and outdoor Poor Law medical relief in certain unions to be selected from a list drawn up by the Commission.

The inquiry, which began at the end of April, 1907, and terminated at the end of that year, was confined to England and Wales, and with regard to certain inspections Dr. McVail had the assistance of Dr. Joseph William Gill. The rural unions visited were chosen from different parts of the country, and in eleven instances both indoor and outdoor medical relief were studied; in four other rural unions only the workhouses were visited. The urban unions in which both indoor and outdoor inquiries were conducted were King's Norton, in the Birmingham district; Pontypridd in South Wales; Salford; and Hull. Barry Docks, St. Helens, Camberwell, and Edmonton were also visited; and the Whitechapel Infirmary, the Chelsea and Kensington Guardians' Children's Cottage Homes, and the West London Children's (Barrack) Schools were inspected. Dr. McVail deputed Dr. J. R. Currie to visit nine Poor Law dispensaries in the metropolis, two in King's Norton, and four in Salford. The visits to the unions were paid without previous intimation to the guardians or their officers.

Questions of medical relief and other relief are so closely related that Dr. McVail in reporting on medical relief found it impossible to keep clear of references to some other questions. The recommendations and suggestions he makes are of a twofold character, being based, first, on the assumption that the present local organizations will remain but be improved in detail; and, secondly, that there may be a fundamental change in the local authorities, or a transference to county or municipal administration of medical work at present done under the Poor Law, with the object of developing the preventive as distinguished from the curative or palliative side of medical treatment.

Dr. McVail concludes his report by two memoranda. The first one adumbrates a scheme of medical provident institutions maintained partly by members' contributions and partly by public funds, and indicates the possible relation of such a system to the Poor Law, to the great friendly societies, to the present system of free hospital dispensaries (out-patient departments), and to the work of the medical profession. The second memorandum deals with home medical inspection.

The appendices to the report contain notes on the various unions visited, and Dr. Currie's report on the Poor Law dispensaries visited by him.

INADEQUACY OF THE POOR LAW MEDICAL SYSTEM.

We may turn at once to Dr. McVail's general conclusion and quote it in full, drawing particular attention to the truth of the picturesque phrase with which it opens:

> Poor Law medical relief, both urban and rural, is a cripple supported on two crutches—the general hospitals on one side, and gratuitous medical work on the other. The general hospitals supplement the workhouse infirmaries, whilst the unpaid work of the district medical officers and other medical men supplements outdoor medical relief. The fact is that the whole system would break down if it were not thus assisted. But it is obvious that such charitable contributions in supplement of the Poor Law cannot be uniform throughout the country. Medical men are not all alike in their willingness to work for nothing, private charity does not equally abound everywhere, general hospitals are not equally well supported everywhere, and are not within convenient distance of every part of the country. At present there is nothing at the same time systematic and complete in the provision made. The systematic part is the Poor Law, whose operations, though national, are incomplete and insufficient. The completing part is local, and consists in the gratuitous work of the doctors and the assistance of private charity and the general hospitals; but these are not systematic. And I have already given facts to show that medical relief is inadequate in its dealings in respect of paupers, with the most important medical problems of the time, the healthy up-bringing of children, the control of phthisis, and the early preventive treatment of disease.

Dr. McVail condemns a public policy under which an authority representing the community confers personal benefits without any accompanying requirements as to good order or obedience, and maintains that it is not worth while to enter on any reform of the Poor Law unless this policy is changed. In expressing this opinion he specifies the following familiar conditions as among those which he has in mind:

> Lazy, drunken loafers are taken into the workhouse to be cleansed and fed, and tended during their recovery from a debauch, or are sheltered and boarded through the inclement weather of winter, and let out again to revert without restriction to their life of misconduct in summer. Prostitutes come in to be treated for the foulest diseases, and go out again to resume their old career. Persons suffering from the most serious transmissible maladies are afforded relief without prevention of opportunities to inoculate the healthy or contaminate the next generation. Weak-minded girls or dissolute women enter the workhouse to be delivered of illegitimate children, and go away again to return time after time in the same condition. Phthisis cases are maintained in crowded, unventilated houses where there is unrestrained facility to convey the disease to their own offspring. Diabetes cases live on the rates and eat what they please. Infirm men and women supported by the Poor Law are allowed to dwell in conditions of the utmost personal and domestic uncleanliness. Widows get money for the upkeep of their family without any advice or requirement as to the spending of it or as to the healthy rearing of their children. Outdoor medical attendance is freely and unconditionally provided by the guardians for the drunken and the immoral.

Dr. McVail then makes two sets of recommendations, one to apply if boards of guardians are continued, and the other if they are to be replaced by a comprehensive system for the prevention of disease and the relief of sickness and destitution.

REFORM.

If the guardians are to remain, Dr. McVail advises that the Local Government Board should possess and exercise much greater authority, and should have the power and will to enforce the observance of the rules and regulations which it issues from time to time. He considers:

1. That the administrative areas of most boards of guardians should be greatly enlarged, so that each would have under its control multiple institutions capable of being devoted to separate charities.
2. That both indoor and outdoor medical relief should be under regular and systematic inspection by medical inspectors of the Local Government Board, who should in their reports include a reference to the kind and quality of the work done by medical officers and nurses, indoor and outdoor; to the size and convenience of the areas in which the work is done; to the salaries paid and the sufficiency of the medical and nursing staff provided by the guardians.
3. That the salaries of medical officers should not cover the supply of medicines, and that the minimum fees paid to medical officers, indoor and outdoor, for attending midwifery cases should be increased, and no extra payment made in respect of difficult cases.
4. That the management of phthisis should receive much more attention than at present, and that the sanitary supervision of paupers' houses in which cases are being treated should be regular and thorough, and that to this end the district medical officers should intimate to the medical officer of health all phthisis cases coming officially under their notice, as is now being done in England under the recent order of the Local Government Board; that the boarding-out of suitable cases in country cottages should be arranged for, and that reasonable and properly designed provision should be made in Poor Law sick wards and infirmaries for cases of phthisis which cannot be otherwise dealt with.
5. That epileptics should be treated in separate institutions or colonies, and imbeciles partly by boarding out and partly in special institutions.
6. That readily curable forms of mental derangement, including delirium tremens, should not be certified as

insane until opportunity has been given for recovery in special wards in Poor Law infirmaries or workhouses.

7. That rural boards of guardians should be obliged to contribute to accessible general and special hospitals and convalescent homes, and to use them for suitable cases; but that if general hospitals are not within reach or are not open to paupers, rural boards should, either separately or in combination, provide infirmaries of their own or contribute towards the erection of general hospitals.

8. That in urban areas, so far as cases are received in general hospitals or relieved at public dispensaries, urban boards of guardians should make contributions to the authorities, that urban Poor Law dispensaries should be improved and systematically inspected by the Local Government Board, and that as little restriction as possible should be put on the use of maternity wards by married women not ordinarily receiving Poor Law relief.

9. That all observed unhealthy conditions in houses occupied by paupers should be reported by the district medical officer to the medical officer of health, and all ordinary nuisances by the relieving officer.

10. That the district medical officer should report to the guardians all cases in which his instructions are not obeyed by patients, and that in the event of persistent disobedience Poor Law relief should be withdrawn or the patient compulsorily removed to hospital.

11. That, in determining the conditions under which pauper children should be reared, institutional life should be avoided as much as possible, and that when the mother is a widow she should receive money-relief sufficient to enable her to feed her children and keep them and the dwelling clean; but that if the mother is drunken, immoral, or incompetent, the children should be taken from her.

Reconstitution.

Dr. McVail describes, and obviously prefers, a scheme for the reconstitution of Poor Law medical relief under an authority which should not only give medical relief in destitution, but would also take charge of all other public medical duties, so that its primary object would be not relief of destitution, but preservation of bodily and mental health and the prevention and cure of disease. He would reorganize the whole sanitary service in rural England, constituting local authorities with larger areas, whose main policy it would be to maintain the health of those committed to their care and to diminish the need for the cure of disease and the prescribing of drugs, but in whose functions the treatment of disease in paupers would be included. In addition to the duties now ordinarily discharged by a public health authority, it would have under its direction district medical officers whose duty it would be not merely to cure or palliate, but to prevent disease. Such an authority would have a principal medical officer, but Dr. McVail does not suggest that all such officers should be medical officers of health, believing that "for much of the supervising work a clinician might be better than a sanitarian." He, however, thinks that it would be necessary to require the district medical officers to possess an acquaintance with the preventive side of medicine. In favour of this scheme he argues: (1) That the healthy rearing of pauper children from their earliest years is a duty more suited for a health than for a Poor Law body, and that, as the officers directly engaged in this work would be the district medical officers, "supervision over them could best be exercised by a health authority having the benefit of skilled medical advice." (2) "That the control of pauper phthisis and phthisical families and their houses should certainly lie with the health authority." (3) That "almost every disease can be dealt with from the standpoint of prevention," and that "the early stages of disorders of all organs of the body—heart, lungs, kidneys, digestive system, brain, and the rest, often furnish indications for preventive measures." (4) That if the care of sick paupers were handed over to a health authority, some of the rural workhouses might be converted into hospitals for acute diseases, or surgical hospitals, into which persons requiring institutional treatment would be more willing to enter than into a workhouse.

There would then be left to the Poor Law authority only the relief of destitution, and Dr. McVail asks whether this also might not be handed over to the new health authority he has imagined.

Medical Provident Institutions.

In his memorandum on this subject Dr. McVail first discusses the advantages and disadvantages of a free medical service. The chief advantage is, he says, that "free access to, and acceptance of, medical advice on the part of the general community would certainly result in great improvement in average physical health and great diminution in the prevalence of disease," but he rejects the suggestion for reasons which had best be given in his own words:

> If free medical attendance should be provided out of the rates because in itself it would be useful in improving the health of the community, medicines, of course, should be similarly provided. But in the treatment of disease it is hard to distinguish between food and medicine, so that an individual requiring the one out of the rates would similarly be provided with the other. And good clothing also has a bearing on health, so likewise has good housing and suitable employment, and a regular holiday in summer, and freedom from worry of all kinds. In short, the vista which is opened up by the suggestion of free medical service is practically endless.

He recommends in place of this the institution of a system of universal medical provident institutions. To these institutions the State should contribute, and thereby acquire a right to take part in their management and prevent abuses. He suggests that a list should be formed of medical men attached to each institution; and although the points are not specifically mentioned, would seem to assume that every medical man in the district should be eligible to serve, and that each member of the institution should have the right to select his medical attendant. He suggests that the controlling body of each provident medical institution should have the right of revising the list of medical men from time to time, and that the payment of the doctor should be by an annual fee for each member on his list. While admitting the impossibility of making membership compulsory, Dr. McVail considers that the inducements to voluntary membership would be threefold:

> The State subsidy would be a direct attraction. Intelligent people of limited means would be very willing to contribute their moiety in order to get the benefit of the State's moiety. In the second place, the adoption by the new health authorities of a firm policy of refusal to grant medical relief to persons able to maintain themselves would indirectly promote the success of medical provident institutions. In the third place, the inherent value of the institutions would be apparent even at the beginning, and would quickly become more apparent as the result of experience.

He believes that if a general system of State medical provident institutions were established the friendly societies might discontinue medical attendance and medicines during illness, and that sooner or later out-patient departments of hospitals, except certain special departments requiring the use of expensive apparatus, would disappear.

The great difficulty, of course, comes when it has to be suggested how to deal with the person who will not voluntarily become a member of a provident institution. Upon this point Dr. McVail makes the following observations:

> Supposing that a casual labourer, owing to illness and unemployment, required for himself and his dependants money relief from the Poor Law, and required, at the same time, medical attendance to be provided by the health authority, it might be arranged that the latter relief be given through the agency of a medical provident institution, the services of one of its officers being obtained, and a payment in respect thereof being made to the funds of the institution by the health authorities responsible for the medical attendance. If the patient were better removed to a hospital or infirmary, and if the health authority possessed such an institution of its own—say a transformed workhouse—the man would be sent there. Otherwise he might be sent to a voluntary hospital, and his treatment paid for by the health authority.

Home Medical Inspection.

The final memorandum contains a justification of the frequent references to preventive medical work in relation to the individual and the family. After enumerating the duties which, under this conception of the scope of the medical profession, Dr. McVail would assign to the district medical officer, he sums up as follows:

> The medical man, in short, would be the family physician, not merely attending on acute illness, but taking charge of the general physical health and well-being of those who had placed themselves under his care. The prescribing of drugs would be the merest incident in his work, instead of, as is too often the case at present, its principal feature; and the time, both of the doctor and his clients, would be far more profitably occupied in the former way than in the latter.

MEDICAL INSPECTION AND AFTER.

LONDON.

MEDICAL INSPECTION.

THE London Education Committee, at its meeting on March 17th, adopted and referred to the County Council a report on the medical inspection of school children, stating that it had adopted a modified scheme. The Education (Administrative Provisions) Act, 1907, imposed the statutory obligation to provide for the medical inspection of school children immediately before, or at the time of, or as soon as possible after, their admission to a public elementary school, and on such other occasions as the Board of Education might direct.

The modified scheme adopted by the London Education Committee provides that the complete inspection of every child admitted to or leaving school shall be carried out in a limited number of schools (40 schools), while in a further limited number of schools (40) every child admitted for the first time, or who is about to leave school, shall be inspected; the records taken in these schools will not be so elaborate as those prescribed by the regulations of the Board of Education. In the remaining schools — that is to say, in the large majority — individual examination will only be made in the case of children presenting some abnormality, by which we understand that only those children will be medically inspected as to whom the teachers or other officials of the school suspect that they are abnormal. This modified scheme for medical inspection has been submitted to the Board of Education, and the Board in giving its approval refrained from insisting upon its full requirements being carried out in respect of every child at present, but added it must not be forgotten that, in considering the adequacy of such proposals, the Board will not be able to adopt the same standard of efficiency as they feel justified in applying to a scheme of an initiatory character.

With regard to communicating the fact of the necessity of medical treatment to parents, and to inviting their attendance, as well as that of teachers, at the inspection, the Committee made the following recommendations:

We propose that, in cases where the school doctor is of opinion that medical treatment is necessary a notice shall be sent to the parents or guardians informing them of the nature of the affection from which the children are suffering and advising them to consult a doctor; and that the parents shall be encouraged to attend the inspection in cases where individual children are examined. We think also it would be an advantage for the teacher of the class concerned to be present on these occasions, as the teacher would be in a position to give the school doctor helpful information, and the doctor would be able to give useful information to the teacher. We have accordingly had a form prepared notifying parents of the date of the visit of the school doctor and inviting their attendance. We have also approved the following letter to be sent to the teachers:

> The Council is required by Section 13 (1) of the Education (Administrative Provisions) Act, 1907, to arrange for the medical inspection of children attending public elementary schools at such times as the Board of Education may direct. Each child admitted to school for the first time or who is about to leave school is to be medically inspected. For this purpose the school doctor will visit your department on the , and I shall be glad if you will grant him the necessary facilities for carrying out the work. Will you be good enough to place the following information in regard to each child on a medical record card: Name, address, date of birth, school, department.
>
> Before the doctor's visit a copy of form M 64 (inviting parents or guardians to be present) should be sent to the parent or guardian of each child to be examined. After the examination the doctor will supply you with a card M 49 (treatment card), for each child requiring treatment, to be forwarded to the parent or guardian. It is hoped that you will be able to arrange for the class teacher to be present at the examination in order that he may be able to obtain as much information as possible about his pupils.

The London County Council had this report before it at its meeting on Tuesday last, and its rejection was to have been moved by Mr. Jephson.

Mr. JEPHSON, however, withdrew his amendment, contenting himself with a protest against the "insufficiency" of the scheme.

The report was thereupon received.

MEDICAL TREATMENT OF SCHOOL CHILDREN.

The County Council also had before it the report, with appendices and notes, of the special committee appointed by the London Education Committee to inquire into the question of the medical treatment of children attending public elementary schools in London.[1] In accordance with the Standing Orders of the Council, the report and recommendations had been considered by the Finance Committee of the Council, which presented the following report:

Report of Finance Committee.

"The Education Committee are submitting to the Council certain recommendations with reference to the medical treatment of school children. The report of the Education Committee treats the subject in a general way only, and no estimate is given of the probable expenditure to which the Council will be put in the event of a scheme being formulated on the lines indicated in the report. The only reference to cost is the statement that 'no provision has been made in the maintenance estimates 1909–10, but a sum of £5,000 has been included in provision money for the financial year in question.' The sum mentioned cannot, of course, be taken as any indication of the cost which the Education Committee anticipate would be involved in giving effect to the proposals which they indicate. The Education Committee are not, in fact, asking the Council to adopt any specific proposals, but only to express its opinion upon important questions of principle—obviously as a preliminary to taking further action and presumably formulating a more definite scheme. It is clear that the possibilities of expenditure for medical treatment of children in the elementary schools are great, even if limited to the specific classes of ailment to which the Education Committee specially call attention—namely, affections of the teeth, eyes and ears, ringworm and favus. It is quite impossible for us to give any information as to the cost of the proposals which are foreshadowed by the recommendations of the Education Committee. Full estimates must be laid before the Council before any definite scheme for the treatment of children is submitted, and we have communicated to the Education Committee a list of the points upon which, in our opinion, information should be furnished in connexion with any such scheme.

"The question of medical treatment has been under consideration for some time, but the position has, in our opinion, recently undergone a considerable change. The Prime Minister, on March 18th, 1909, received a deputation from local education authorities of England and Wales, together with members of Parliament invited by the local education authorities within their respective constituencies, with reference to the cost of national education and the necessity for an increased grant from the Imperial Exchequer. On that occasion the Prime Minister, dealing with the further educational burdens recently imposed upon local authorities, said:

> As regards the last two, medical treatment and feeding of children, as you all know, they are optional and not compulsory burdens . . . that is to say, it rests entirely in the discretion of the local authority, having regard to local conditions and local requirements, whether or not they shall be incurred.

"Moreover, no hope was held out by the Prime Minister or by the Chancellor of the Exchequer, who also addressed the deputation, of any increased grant being made at present from Imperial funds in connexion with medical treatment.

"It seems to us, therefore, that the first question which the Council is called upon to decide is the broad question of principle whether or not, having regard to the Prime Minister's statement and the present and prospective burdens on the rate, the Council should, in the absence of any grant in respect thereof from the Imperial Exchequer, undertake the optional duty of medically treating school children; and the Council should, in our opinion, take the opportunity afforded by the Education Committee's recommendations to settle this general question. A further subsidiary question is whether or not the Council should undertake the duty of supplying medical treatment in any form unless power is given to the local education authorities to recover the cost of treatment from the parents except in cases where it is shown that the parents are not in a position to pay. Such power already exists in connexion with the feeding of school children, and no difficulty ought, we think, to be experienced by the Government in passing a short Act giving similar power to local education authorities in connexion with medical treatment.

[1] See BRITISH MEDICAL JOURNAL, December 26th, 1908, p. 1869; and January 9th, p. 96.

"In connexion with the general question whether the Council should undertake the medical treatment of children it should be borne in mind that the education rate is rising, and that it must, under present conditions and in the absence of increased Government grants, continue to rise, this being due amongst other things to the automatic increases in teachers' salaries, the cost of feeding necessitous school children, the new duty imposed on the Council of the systematic medical inspection of all children in elementary schools, and other matters to which the Council is committed. It should also be remembered that pressure is being brought to bear upon the Council to increase its expenditure in connexion with education in various other directions, amongst which the question of a complementary superannuation scheme for teachers may be mentioned. The question which naturally arises is whether there is not a limit to the burden which the ratepayer should be called upon to bear in connexion with education, and whether, as between the many objects desirable in themselves, which go to make that burden unduly heavy, it will not be necessary for the Council to make a selection."

Mr. Cyril Jackson, Chairman of the Education Committee, in a speech which was listened to with close attention, emphasized the seriousness of the problem. It was to be regretted, he said, that so small a number of hospitals and institutions had replied to the inquiries of the Special Subcommittee, but he thought the hesitation was natural when the Council asked such questions for the first time. It was hoped to have shortly a conference of hospital chairmen and secretaries to discuss what could be done by the hospitals and what the Council could do to help them. He was bitterly disappointed that the Prime Minister had received their request for increased Exchequer grants for medical treatment so unsympathetically, but failing that, they must make a start and provide some treatment. He could not advise the Council to undertake full treatment, important and necessary as it was. Dental treatment was the more expensive, and the Council should take in hand ringworm, suppurating ears and eyes. Figures received that day went to show that there were 2,706 cases of ringworm in London schools. Mr. Jackson concluded with a word of commendation of dispensaries, which he thought were often unfairly attacked, and also said he hoped the Council would extend its interest to the benefit societies, which had done so much for the sick poor.

Mr. Hayes Fisher moved a long amendment which practically embodied the report of the Finance Committee, of which he is chairman. The amendment declared that the Council is of opinion that certain diseases of children should be treated, and referred it to the Education Committee to report as to the cost of treating each of the affections mentioned in their report, and as to the steps necessary to be taken to amend the Education (Administrative Provisions) Act, 1907, to enable the Council to recover the cost of medical treatment from parents able to pay. Mr. Fisher urged that if the Council knew what it would cost to treat each disease, it could make a selection. He did not say the Council would never treat the children's teeth, but it ought to wait until it had power to recover the cost from parents.

Mr. Ernest Gray seconded, and, in spite of cries of "Time," continued his speech until the hour when only unopposed business is taken. The Moderate Whips did not follow the course which is often taken, of moving "that the sitting be continued until the matter under discussion shall have been dealt with," so the debate was adjourned until the last meeting before the Easter recess. If the instruction is then carried the Education Committee will not meet to consider it for a month.

WARWICKSHIRE.

Dr. A. Bostock Hill has prepared a report to the Education Committee of the Warwickshire County Council upon the results of the medical inspection of school children during the last three months of 1908. The inspections were carried out by Dr. A. Hamilton Wood and Dr. W. H. Davison, the former examining 2,124 children and the latter 1,051. Of the total, 1,327 were found to be suffering from defects which necessitated advice being given. In 342 cases bodily uncleanliness was present to a marked degree, and in 592, or 16.7 per cent., verminous heads led to cards being sent to the parents. There were 626 children of whom each suffered from four or more carious teeth. The following defects were found: Enlarged tonsils, 291; adenoids, 129; defective vision, 265; defective hearing, 41; various ear diseases, 66; defective speech, 37; "murmurs" of the heart, 81; anaemia, 94; incipient consumption, 14; tuberculous disease other than consumption, 4; epileptics, 4; bronchial catarrh, 82; ringworm, 37; impetigo, 17; and other cases of disease, 63. Fifty-five mentally defective children were discovered. Dr. Bostock Hill describes the gratifying work done by the health visitors under his direction in seeking to remedy some of the worst cases revealed by the inspection.

LONDON WATER.

The Third Report on Research Work presented by Dr. A. C. Houston, Director of Water Examinations, to the Board on Friday, March 26th, deals with the Storage of Raw River Water antecedent to Filtration. In the introduction he points out that the medical advisers of the Local Government Board have long held the view that "time" is to be regarded as an important element among conditions that in Nature combine to annul the vital activities of particulate matter causative of disease. In no direction, perhaps, is this "time factor" of higher practical importance than in the case of storage of impure river water. The work of the water examination staff of the Metropolitan Water Board has been largely devoted to investigating the question anew, with special attention to those tests which gauge the viability of excremental bacteria in water. It is now thought that the merely mechanical effect of storage—that which results in the sedimentation of many of the microbes originally present in water—is of far less importance than certain devitalizing processes which occur under storage and which involve the ultimate extinction of specific bacteria in the water *plus* its sediment. A practical outcome of experimental work on this subject is that dependence is now being placed more and more on experimental proof that the water reaching the filter beds is, as the result of adequate storage, in a reasonably "safe" condition *antecedent* to filtration. When the stored water results are satisfactory, this really constitutes a new and important element in the "safety" of the London water supply, for it means that, even if a breakdown in the filtering arrangements occurred, the quality of the water distributed to consumers, although possibly open to criticism on physical grounds, might yet be relatively (if not absolutely) innocuous. Systematic observations on the effect of storage of *raw* water were commenced in August, 1907, and the report under review deals with the twelve months ended July 31st, 1908. After consultation with the engineering staff of the Board, the following waters were chosen for study:

A. *Raw* Lee river water above the "intake" for waterworks purposes at Ponder's End. B. Lee *stored* water—that is, water fairly representative of the above *raw* Lee water after storage in the eastern district reservoirs in the Lee valley. C. *Raw* Thames river water at Hampton not far distant from the "intakes" for waterworks purposes of most of the Thames derived supplies. D. Chelsea *stored* water—that is, water fairly representative of the above *raw* Thames water after storage in the Chelsea reservoirs. E. Lambeth *stored* water—that is, water fairly representative of the above *raw* Thames water after storage in the Lambeth reservoirs. F. Staines *stored* water—that is, water fairly representative of the above *raw* Thames water after storage in the Staines reservoirs.

Results.

The following is a summary of the results:

Thames Water.

About 50 per cent. of the samples of *raw* Thames water contained typical *B. coli* in one-tenth of a cubic centimetre. Of the Staines, Chelsea, and Lambeth *stored* water samples about 34, 43, and 16 per cent. respectively, contained *no* typical *B. coli* in one thousand times as much water, namely, in 100 c.cm. Thus, the Lambeth stored water was about one hundred and the Staines and Chelsea stored water between one hundred and one thousand times less impure than the *raw* Thames water.

Lee Water.

Over 50 per cent. of the samples of *raw* Lee water contained typical *B. coli* in one-tenth of a cubic centimetre. As regards

the Lee *stored* samples, actually as many as 67.4 per cent. yielded negative results with 100 c.cm., and only 32.5 yielded positive results in that amount. Thus, the Lee *stored* water was over one thousand times less impure than the *raw* Lee water.

These results, says Dr. Houston, remarkable as observed facts, are still more remarkable in their indirect bearing on the question of the "safety" of stored water. For the harmless, or comparatively harmless, *B. coli* is, like the highly pathogenic typhoid bacillus, of intestinal outcome. Moreover, *B. coli* is more resistant to unfavourable surroundings than the virulent microbe of typhoid fever. It follows, therefore, that processes which lead almost to the extinction of *B. coli* should operate more powerfully still on less robust germs of disease. Further, it is hardly conceivable that in any set of circumstances the typhoid bacillus would ever be present in any considerable bulk of the *raw* river water in anything like the same proportion as *B. coli*. In a previous report it was shown that if typhoid bacilli are added artificially in large number to *raw* river water, the great majority of them die within one week; and in a forthcoming report Dr. Houston says it will be shown that the death-rate of the cholera vibrio is, under parallel conditions of experiment, still more rapid. Further, in a separate report it has been shown that a prolonged search for the typhoid bacillus in the *raw* river waters yielded negative results. Hence, although we are without proof of the absence of the typhoid bacillus from these *raw* river waters, there is a strong presumption that it cannot be uniformly present in them unless in extremely sparse numbers.

It has been pointed out in previous reports that, apart from the question of the *actual* number of typical *B. coli* in the *raw* and *filtered* waters, there is a wide difference between the proportion of typical and non-typical *B. coli* in the two kinds of water. Thus, on the average, and dealing with the twelve months ended March 31st, 1908, out of every 100 *coli*-like microbes isolated from the *raw* and *filtered* waters 81.6 and 54.4 respectively proved to be typical.

The salient points resulting from the inquiry are summarized as follows: Taking the Lee results (averages) as an example, it may be said that the advantages of using *stored* Lee water as compared with *raw* Lee water would be: Over 97 per cent. reduction of the total number of bacteria capable of growing at blood heat, and of the bacteria able to grow in a bile-salt medium (chiefly excremental microbes). A one-thousand-fold reduction in the number of typical *B. coli*. Dr. Houston's inferences thereon are: That a *raw* water which has uniformly undergone such a remarkable metamorphosis is almost certainly incapable after filtration, possibly (perhaps even probably) antecedent to filtration, of causing epidemic disease. Nevertheless, he regards storage of water as a prefiltration precaution of the utmost value, but not as a substitute for filtration.

Alternative Measures to Storage.

After discussing the results of chemical examination and the shape, size, depth, construction, and method of working storage reservoirs, Dr. Houston briefly considers measures for the improvement of London's water supply that may be regarded as alternative to storage. On biological grounds the only possible alternative to storage would, in his opinion, be sterilization. Having regard to the necessity of storage (for purposes of *quantity* apart altogether from questions of *quality*) to filtration in utilization of existing plant and to the epidemiological history of the metropolis, the wholesale sterilization of London water seems to him to be, on available evidence, economically out of the question, and therefore impracticable.

Disadvantages of Storage.

Although it would be wrong to infer that storage often, or habitually or necessarily, creates conditions inimical to filtration, there is inevitable danger that prolonged storage, especially if the water remains stagnant, may lead to the abnormal development of vegetable growths, materials harmless in themselves, but resulting in the deterioration of the water as judged by chemical and physical standards, and causing practical difficulties with its filtration. A possible disadvantage of using stored water is that the "blanket" or "skin" which forms on the surface of the sand in the filter beds may not prove so effective a bacterial filter as that resulting from the use of raw river water. There may, Dr. Houston thinks, be an element of truth in this contention; but it is certain that sometimes the "stored-water skin" errs on the side of being too impervious, and it is obvious that it is much less important to have a microbe-tight blanket when using comparatively safe stored water than when using potentially dangerous raw river water. His experience since 1905 of the quality of filtered water supplied to East London from the East London (Clapton) Works, which deals, after prolonged storage, with the initially unsatisfactory Lee river water, does not lead him to think that this question of "stored-water skin" *versus* "raw-water skin" need necessarily be of vital importance.

Advantages of Storage.

By far the strongest plea in favour of storage is based on the belief that *adequately* stored water is probably incapable of causing epidemic disease. No supersession, however, of filtration is suggested by Dr. Houston; his plea is for storage *plus* filtration. Assuming that an adequately stored water can be accepted as epidemiologically "safe," he would be satisfied if such water were passed through mechanical filters at an exceptionally rapid rate with a view to sending the water thus dealt with directly into supply. These mechanical filters, unlike sand filters, can be rapidly cleaned and put into operation again, which would be a great advantage in such circumstances. Another strong plea in favour of storage is the establishment of a continuous sense of security. If the results of the examination of such samples showed, from time to time, that the water had undergone the "changes" which in Dr. Houston's opinion point to "epidemiological safety," a lasting sense of security would as a consequence be established, and this irrespective of subsequent or final filtration. Another argument in favour of storage is that it tends to wipe out the gravity of the charge that London's water supply is derived chiefly from sewage-polluted rivers.

The chief points in favour of the storage of *raw* river water are summed up by Dr. Houston as follows:

(1) It reduces the number of bacteria of all sorts. (2) It reduces the number of bacteria capable of growing on agar at blood heat. (3) It reduces the number of bacteria capable of growing in a bile-salt medium at blood heat, chiefly excremental bacteria. (4) It reduces the number of *coli*-like microbes. (5) It reduces the number of typical *B. coli*. (6) It alters certain bacteriological river-water ratios—for example, it reduces the number of typical *B. coli* to a proportionately greater extent than it reduces the number of bacteria of all sorts. (7) Storage, if sufficiently prolonged, devitalizes the microbes of waterborne disease—for example, the typhoid bacillus and the cholera vibrio. (8) It reduces the amount of suspended matter. (9) It reduces the amount of colour. (10) It reduces the amount of ammoniacal nitrogen. (11) It reduces the amount of oxygen absorbed from permanganate. (12) It usually reduces the hardness and may reduce (or alter the quality of) the albuminoid nitrogen. (13) It alters certain chemical river-water ratios—for example, the colour results improve more than the results yielded by the permanganate test. (14) It has a marked "levelling" effect on the totality of water delivered to the filter beds. (15) Storage tends generally to lengthen the life of the filters. (Only under exceptional conditions is the converse true.) (16) An adequately stored water is to be regarded as a "safe" water, and the "safety change" which has occurred in a stored water can be recognized by appropriate tests. (17) The use of stored water enables a *constant* check to be maintained on the safety of London's water *antecedent* to and irrespective of filtration. (18) The use of stored water goes far to wipe out the gravity of the charge that the chief sources of London's water supply are from sewage-polluted rivers. (19) The use of adequately stored waters renders any accidental breakdown in the filtering arrangements much less serious than might otherwise be the case. (20) The habitual use of stored water would lighten the grave responsibilities of the Water Board as regards the safety of the London water supply, and would tend to create a sense of security amongst those who watch over the health of the metropolis.

Conclusion.

After discussing in detail the length of time a water should be stored, Dr. Houston's final conclusion is that *raw* river water should be stored antecedent to filtration, preferably for thirty days. The question of whether the thirty days' storage should be fixed on a maximum or on a minimum basis must be left unanswered; but, if the former alternative be chosen, the desirability of employing supplementary processes of water purification to tide over emergencies is worthy of consideration.

The Water Examination Committee, in presenting the

report, stated that in its opinion the results of these investigations clearly proved that the policy of storing all raw river water antecedent to filtration was sound, and they felt that the habitual use of stored water lightened the grave responsibilities of the Water Board as regards the safety of the London water supply, and tended to create a sense of security amongst those who watched over the health of the metropolis. The desirability of considering whether supplementary processes of water purification, such as mechanical filters, precipitation tanks, etc., should not be employed to tide over emergencies was, however, a matter which merited attention in the future. The Board regarded the researches as not only of high scientific importance but also of great practical utility.

The report was adopted.

BRITISH MEDICAL BENEVOLENT FUND.

At the March meeting of the committee twenty-three cases were considered, and grants, amounting to £185, made to nineteen of the applicants. Appended is an abstract of the cases relieved:

1. Daughter, aged 45, of late M.D.Lond. Underwent serious operation about a year ago, and is unable at present to earn a living. Income only a few shillings a week. Relieved once, £5. Voted £5.

2. Widow, aged 34, of M.R.C.S.Eng., L.R.C.P.Edin. Quite unprovided for at recent death of husband. One child, 4½ years. Hopes to obtain a situation as housekeeper, but health has suffered greatly from nursing her husband during the two years' illness which preceded his death. Voted £10.

3. Widow, aged 55, of L.S.A. No income; eight children, but only able to give slight help. Proposes to move, so as to decrease her rent. Relieved ten times, £115. Voted £5 for moving.

4. Widow, aged 62, of L.F.P.S.Glasg. No income; four children, but none able to help at present. Used to let lodgings. Voted £12.

5. Widow, aged 38, of M.B., Ch.B. Left quite unprovided for a few months after marriage, and lives with her mother, aged 72, who can ill afford to help. Health at present too indifferent to allow of permanent occupation. One child, aged 4 years. Voted £5.

6. Daughter, aged 50, of late M.D.Aberd. Has supported herself for many years by giving music lessons, but finds increasing difficulty in obtaining pupils. Is in bad health, and ordered to take a rest. Voted £6.

7. Daughter, aged 44, of late L.R.C.P.Edin. Used to be a dressmaker, but employers retired from business, and applicant has found it impossible to get regular work since. A little help from a friend, and earns as much as possible by sewing. Relieved four times, £40. Voted £6.

8. Widow, aged 60, of L.R.C.S., L.R.C.P.Irel. Lost everything through the failure of a bank, and is now in a very precarious state of health. No income; helped by a sister, who herself has to earn a living. Relieved twice, £24. Voted £12.

9. Widow, aged 59, of L.S.A. Lets lodgings; five children, but only able to give very slight help. Relieved seven times, £80. Voted £10.

10. Widow, aged 51, of L.R.C.P., L.R.C.S.Edin. Quite unprovided for at husband's death a few years ago. Obtains shelter as a caretaker, but receives no remuneration. No children. Relieved five times, £46. Voted £12.

11. Widow, aged 64, of M.D.Glasg. No income, and for several years has been practically dependent on this Fund and the Ladies' Working Guild. Relieved nine times, £104. Voted £10.

12. Widow, aged 50, of M.R.C.S.Eng., L.R.C.P.Edin. Kept a boarding-house and nursed her husband for several years previous to his death, but is now in such bad health that she is entirely dependent on her friends and a couple of sons who are only just self-supporting. Relieved six times, £82. Voted £10.

13. Widow, aged 44, of M.R.C.S., L.R.C.P. Has a small annuity, but is in such bad health that it is insufficient for unavoidable expenses. Two children, aged 14 and 12. Relieved five times, £72. Voted £12.

14. Daughter, aged 54, of late L.F.P.S.Glasg. Unable to obtain regular employment on account of ill-health. Only income £10 a year from the Scottish Indigent Gentlewomen's Fund. Relieved twice, £24. Voted £12.

15. Widow, aged 48, of M.R.C.S., L.S.A. No income; endeavours to support herself by needlework and receives a little help from friends. Two children, aged 22 and 15. Relieved six times, £71. Voted £12.

16. Daughter, aged 52, of late M.R.C.S., L.S.A. No income and is in very feeble health. Receives a little help from a sister. Relieved eleven times, £125. Voted £12.

17. Widow, aged 68, of M.D.Aberd. No income. Children unable to help; a little assistance from friends. Relieved eight times, £102. Voted £12.

18. Daughter, aged 60, of late M.R.C.S. Had a post as companion but was obliged to give it up to nurse two sisters who have since died. Hopes to obtain boarders and is made a small allowance by a relation. Relieved twice, £30. Voted £12.

19. Widow, aged 51, of M.D.Edin. No income; children help as far as possible and applicant earns a little by needlework. Relieved three times, £30. Voted £10.

LITERARY NOTES.

In an article in the *Cornhill Magazine* for April, the Rev. P. H. Ditchfield discusses the mind of the rustic with the insight born of knowledge mingled with sympathy. His experience of the tendency of the countryman to fall into the toils of quacks will doubtless be confirmed by many of our readers. He says:

In spite of his shrewdness, his cleverness, and accurate calculations of the amount due to him for wages, the rustic often falls an easy prey to quacks and impostors. The good gentlemen who undertake to cure all manner of diseases find agricultural labourers some of their best customers. Quack remedies, patent medicines, wonderful oils for curing rheumatism, the bane of the rustic, are eagerly bought, and large sums are wasted out of scant earnings for the purchase of these amazing remedies. I have just seen a most insidious letter written by an American quack to a poor woman who was anxious to obtain a cure for her sick son. This quack has an agent in London who advertises remedies for the disease from which this boy suffers, as well as for many others, and sends a free bottle of medicine. This is followed by a long letter from the American, promising to cure the complaint, the cost of the treatment being £3, but he is obliging enough to say that he will only charge one pound in her case. The sample bottle, he states, was only a tonic, and was not part of the cure, but that if the money be paid, a complete cure will be effected. A ticket for the county hospital happily solved the difficulty, and one pound will not be added to the American quack's receipts. But quacks of other sorts exist nearer home, and some years ago in a neighbouring village a herbalist and astrologist gained a considerable reputation among the poor whom he duped as a "wery clever man." A poor widow who was suffering from a simple form of ophthalmia had implicit confidence in him, until, getting no better and her funds being exhausted, she reluctantly fell back upon the parish doctor. She told him that she had got the black crab cancer in her eye, and that it was sucking her sight out, and that the wise man had informed her that the stuff to kill this monster would cost £2, and that what he had done already had much weakened him. A short time and simple remedies put her quite right; but she always maintained that "'twas the wise man as first poisoned the black crab cancer." The poor folk had generally a firm belief in his powers, though it would have been difficult to find a single cure that he had effected.

A second edition of Professor Karl Pearson's Robert Boyle Lecture on the Scope and Importance to the State of the Science of National Eugenics, which was delivered before the Oxford University Junior Science Club on May 17th, 1907, has recently been issued as No. 1 of a series of papers dealing in non-technical language with the problems of eugenics. It is an introduction to the science of eugenics for the study of which Mr. Francis Galton founded a laboratory at University College, London, with the objects that it should serve as a storehouse of statistical material bearing on the mental and physical conditions in man, and the relation of these conditions to inheritance and environment; as a centre for the publication or other form of distribution of information concerning national eugenics; and as a school of training and assisting researchers in special problems in eugenics. Among the publications that have so far appeared are *The Inheritance of Ability*, by Dr. Edgar Schuster and Miss Ethel M. Elderton; *A First Study of the Statistics of Insanity and the Inheritance of the Insane Diathesis*, by Mr. David Heron; *The Promise of Youth and the Performance of Manhood*, by Dr. Edgar Schuster; *On the Measure of the Resemblance of First Cousins*, by Miss Ethel M. Elderton, assisted by Professor Karl Pearson; and *The Treasury of Human Inheritance* (*Pedigrees of Physical, Psychical, and Pathological Characters in Man*). Two other publications which will appear shortly are *Influence of Parental Occupation and Habit on the Welfare of the Offspring*, by Miss Ethel M. Elderton, and *Influence of Unfavourable Home Environment and Defective Physique on the Intelligence of School Children*, by Mr. David Heron. The Eugenics Laboratory Publications are issued by Messrs. Dulau and Co., 37, Soho Square, London, W.

Thomas Dover has long figured in medical history as a doctor who, finding the practice of medicine too unexciting for his taste, sailed the Spanish Main as a buccaneer. In an interesting article which appeared in the *Bristol Medico-Chirurgical Journal* for March, Dr. J. A. Nixon endeavours to show that this is a legend, and that Dover was not a buccaneer but a merchant adventurer. He says the expedition in which Dover sailed was not of a piratical nature; it was one of those adventurous trading cruises of which Hakluyt in *Principal Voyages of the English Nation* gives many instances. Men who embarked on such

enterprises at the beginning of the eighteenth century had indeed to be ready to defend themselves against attack by Spanish or French vessels, and fighting was a common experience. The voyage round the world of two privateers, the *Duke* and *Duchess*, under the command of Captain Woode-Rogers, was a properly accredited enterprise of the merchant adventurers of Bristol. Dover, who was a man of means, had a share in the risk, and was selected to represent the Owners' interest, and sailed on the *Duke* as second captain under Woode-Rogers and captain of the mariner. He presided over all councils in which he had two votes; and his share of all profits was calculated in thousands to the hundreds of the other senior officers. Ample provision was made for the medical welfare of the expedition. In addition to Dover, there sailed John Ballet, rated third mate, but designed surgeon in case of need (he had been Captain Dampier's doctor in his last unfortunate voyage); James Vigor; James Wasse, surgeon; Charles May, his mate; and John Lang, assistant. Then there was an apothecary, Samuel Hopkins, Dover's brother-in-law. Nevertheless, Woode-Rogers says the surgeons complained of the want of sufficient medicines. Dover's interest in the undertaking seems to have been commercial rather than medical. He was an extremely cantankerous member of the expedition, and when a prize was taken claimed, as second in command, to take command of her. Against this the navigating officers protested, on the ground that he was utterly incapable of the office. He had his way, however, as far as the titular command was concerned, but he was forbidden to interfere in any way with the navigation of the ship. As a physician Dover had been well trained. He was a B.A. of Oxford and M.B. of Cambridge. He practised for a time at Bristol, being the first medical man who offered his services gratuitously on behalf of the poor under the care of the guardians of the city. This was in 1696. In 1709 he sailed as Captain Dover on his famous cruise, in the course of which he discovered Alexander Selkirk, the original of Robinson Crusoe who had been marooned on the Island of Juan Fernandez. At a later period Dover resumed the practice of his profession in Gloucestershire and finally in London. From his belief in the sovereign virtues of mercury he was known as the "quicksilver doctor," and he was the inventor of the *Pulvis Ipecacuanhae Co.* which bears his name. His violent temper made him unpopular among his brethren, whom he amiably described as "a set of gentlemen, who, likewise, work underground, lest their practices be discovered to the Populace." He was the author of a popular work, entitled *The Ancient Physician's Legacy to His Country*, which "made a great noise in London, and was the subject of almost every Coffee-house." He hated apothecaries almost as heartily as Gui Patin, and accused them of inflating bills for treatment of a fever to forty, fifty, or sixty pounds. Whether Dover was a buccaneer or a respectable "adventurer," it appears to be certain that he returned from his expedition, which lasted from 1708 to 1711, a wealthy man. The expedition sacked the two cities of Guaiaquil, Dover leading the van. They took several prizes and cruised about the coast from Peru to California on the look-out for treasure ships. But this, according to the ethical standard of the day, was legitimate commercial enterprise.

Medical News.

A PROPOSAL that immunization against typhoid by vaccination should be introduced is said to be under consideration by the United States Army authorities.

MR. JAMES CANTLIE, F.R.C.S.Eng., has been promoted from Honorary Associate to be Knight of Grace of the Order of the Hospital of St. John of Jerusalem in England.

THE Orient Steam Navigation Company's new twin screw steamer *Otranto* (12,000 tons), launched at Belfast on March 27th, is to go three pleasure cruises to Norway in July and August before being placed on the mail line to Australia.

AT the sessional meeting of the Royal Sanitary Institute to be held at the Parkes Museum, Margaret Street, W., on Wednesday next, Mr. W. D. Scott-Moncrieff will open a discussion on river pollution, its ethics, aesthetics, and hygiene. The chair will be taken by Sir Francis Sharp Powell, M.P., at 8 p.m.

AN appropriation of £2,000 for the care of tuberculosis patients has been approved by the New York Board of Aldermen. The money will be used to fit up two old ferryboats so that they may be used as general tuberculosis hospitals.

SIR GEORGE KING, K.C.I.E., M.B., F.R.S., LL.D., formerly Superintendent of the Royal Botanical Gardens, Calcutta, who died on February 12th, has bequeathed a bronze medallion portrait of himself to the University of Aberdeen. Similar medallions are left to the Linnean Society, London, and to Colonel D. D. Cunningham for life, with remainder to the National Portrait Gallery, Edinburgh.

THE eighth international Conference on Tuberculosis will, as already announced, be held at Stockholm from July 8th to 10th. The programme includes the following questions proposed for discussion: (1) Precautions to be taken in tuberculous families, especially for healthy children. (2) Report of the Sanatoriums Commission. (3) The use of specific agents in the diagnosis and treatment of tuberculosis. (4) Tuberculosis in schools. (5) Miscellaneous addresses. (6) Report on the progress of the campaign against tuberculosis in various countries.

DR. F. W. MOTT, F.R.S., will give two lectures on the brain in relation to right-handedness and speech at the Royal Institution of Great Britain on April 20th and 27th; Dr. W. H. R. Rivers, F.R.S., will give two lectures on the secret societies of Banks' Islands on May 22nd and 29th; Dr. F. Gowland Hopkins, F.R.S., two lectures on biological chemistry on June 1st and 8th; and Dr. F. F. Blackman, F.R.S., two lectures on the vitality of seeds and plants on June 5th and 12th; all these lectures will be given at 3 p.m. At the Friday evening meeting on May 7th Major Ronald Ross, C.B., F.R.S., will deliver a lecture on the campaign against malaria, at 9 p.m.

DR. P. MAURY DEAS, who has been for twenty-five years Medical Superintendent of the Wonford House Hospital for the Insane, Exeter, and who before that was for fifteen years Medical Superintendent of the Parkside County Asylum, Cheshire, is about to retire, and will carry with him the good wishes of his colleagues, and in particular the gratitude of the members of the profession in the south-west of England, whom he represented for many years on the Central Council of the British Medical Association. Dr. Deas will be succeeded by Dr. W. Britain Morton, who for the last twelve years has been the chief medical officer of Brislington House, Bristol, and was formerly assistant medical officer at Wonford House.

THE ninth meeting of the Departmental Committee appointed by the Lord President of the Council to consider the working of the Midwives Act was held at the Privy Council Office on March 31st, Mr. Almeric W. FitzRoy, the Clerk of the Council, presiding. The following witnesses attended and gave evidence: Sir Shirley F. Murphy, Medical Officer of Health of the County of London, on behalf of the London County Council; Mrs. Swinton, Matron of the Buckingham Palace Road Workhouse of the St. George's (Hanover Square) Union, on behalf of the National Association of Workhouse Masters and Matrons; Dr. Edward Sergeant, County Medical Officer of Health, Lancashire, on behalf of the Incorporated Society of Medical Officers of Health, and of the Midwives Act Committee of the Lancashire County Council.

THE usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on March 19th, Dr. de Havilland Hall in the chair. The record of the business of the society during the early part of this year is satisfactory. The number of sickness claims received has been large, but this is expected at this season of the year, and, so far, the amount of sickness experienced compares favourably with the records of the same period of last year. The number of new entrants has been much above the average though not quite equal to the record of 1908. The rapidly-growing number of those members who have increased the assurances they originally effected with the society shows how useful the sick pay is found to be. Numerous letters are received showing how valuable the sick pay, usually £4 4s. a week, is to those who are only temporarily incapacitated, while to those who have no hope of ever recommencing professional work and who for the most part draw an allowance of one hundred and four guineas a year, this continued sick pay is in all cases a valuable assistance and, in some instances, the only bar to actual privation. Prospectuses and all further particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

British Medical Journal.

SATURDAY, APRIL 3rd, 1909.

ADMINISTRATIVE MEASURES AGAINST TUBERCULOSIS.

As already stated briefly, the Memorandum by the Medical Officer of the Local Government Board on Administrative Measures against Tuberculosis, 1909, which was issued recently, is intended to supplement from a medical standpoint the circular letter issued by the Local Government Board with the Public Health (Tuberculosis), 1908, Regulations. It explains and to some extent amplifies these regulations, for though the order was primarily intended only for patients under the care of Poor Law medical officers, the suggestions contained in this Memorandum are of wider application. It is pointed out that all public health administration in relation to tuberculosis, whether in poor persons or others, is concerned with similar problems, and as "poor" persons frequently pass outside the scope of the Poor Law, and as the regulations will in many districts be worked alongside a system of voluntary notification of tuberculosis, it is undesirable to limit the scope of the Memorandum strictly to poor patients.

The Memorandum briefly summarizes the preventive measures desirable in all cases of pulmonary tuberculosis, and indicates the lines to be followed in order to achieve the results aimed at. The question is discussed in a temperate and judicial manner, and the necessity for tact in carrying out administrative action is wisely insisted upon.

In considering the characteristics of tuberculosis which furnish the key to preventive measures, emphasis is laid on the limited sources of infection and the ease with which these may be controlled, as also on the comparatively slight susceptibility of healthy human beings.

The Memorandum lays it down that tuberculosis must be looked upon as a disease of ignorance, and much stress is therefore laid on the importance of educational measures against the disease. As instruction of the patient is essential for the prevention of tuberculosis, it is the duty of the doctor immediately the disease is recognized to inform the patient, or his friends, as to the nature of the complaint, and to give instructions to the patient. He may also be acting in the interest of his patient as well as in that of the public health, in notifying the case to the medical officer of health under a voluntary system of notification, even though the case is not one which is compulsorily notifiable. In this way the medical officer of health may be enabled to furnish supplementary aid in disinfecting rooms or in other ways.

The importance of early diagnosis is insisted upon, and the value of bacteriological investigation as an aid to diagnosis is pointed out, though its limitations are also noted. When notification is made, the visit to the case reported may often afford an opportunity of procuring the examination of others who have been in close and continuous contact with the patient, and in this way cases may be discovered at an early stage. The possibilities in this direction which the systematic examination of school children presents is also pointed out.

One very important feature of the Memorandum is that dealing with the procedure in official investigations; its tone will be widely appreciated, for it points out that inquiries should be tactfully made, and that the advice offered must not interfere with that given by the doctor in attendance. Above all, care must be taken that nothing shall be done that may prevent a consumptive from continuing to earn his livelihood. In certain cases repeated visits may be necessary to ensure that the patient is carrying out instructions. If the spirit of this Memorandum is fully carried out, the co-operation of the medical officer of health would frequently be of great assistance to the doctor in attendance and of benefit to the patient.

The Memorandum concludes with a summary of the chief aids to preventive measures, in the institutional treatment of consumptive patients, dispensaries for consumptives, sanatoriums, and homes for advanced cases.

As a whole the Memorandum is a valuable summary of the measures necessary in the prevention of consumption, and should prove of value to many beyond those who have to treat patients under the Poor Law.

THE DIAGNOSIS OF FUNCTIONAL PARALYSIS.

Any aid to the differential diagnosis of functional paralysis is to be welcomed in the present day, when recent legislation has placed a premium upon malingering and medical men are asked to express opinions on cases which are not under the most favourable conditions for close observation, and cannot always be subjected to the rough tests by which it is sometimes possible to demonstrate the unreal nature of alleged paralyses. Babinski has shown that if a patient with organic hemiplegia is placed upon a high seat so that his legs hang freely, the paralysed leg is extended on the thigh when he folds his arms tightly, or if he is lying down and tries to raise himself into a sitting position with the arms crossed on his chest, the thigh is flexed on the pelvis and the heel is raised from the ground. Finally, if the patient lies down with his legs hanging over the end of the bed, and then tries to raise himself into a sitting position the paralysed leg is extended on the thigh and the thigh is flexed on the pelvis. All these phenomena are absent in hysterical hemiplegia, and are exclusively observed in cases of organic origin. Three years ago Grasset and Gaussel drew attention to another sign, which is, that when a patient with organic disease is able to raise the paralysed leg from the bed, he yet cannot raise both lower extremities simultaneously. This is due to the need there is for fixing the pelvis in the movement of flexing the thigh. This fixation must be furnished by the healthy leg, and when the latter is raised, this is no longer possible, and the paralysed limb drops.

Dr. C. F. Hoover of Cleveland, who has studied this phenomenon from another standpoint,[1] says that when one leg is raised from the bed in a patient with an organic lesion the heel of the other is pressed hard against the mattress; this is very perceptible if a hand is placed under the heel. Conversely, if the patient presses the heel of the foot hard against the mattress, there is a slight raising of the opposite leg.

[1] *Journal of American Medical Association*, August 29th, 1908.

In cases of organic hemiplegia or crural monoplegia due to organic causes this "complemental opposition" on the side of the sound leg is never absent. In two patients who complained of a crural monoplegia following an injury Dr. Hoover was able to demonstrate by the absence of these symptoms that there was no real paralysis. When the patient was asked to raise the paralysed limb there was no pressure of the heel on the sound side, but when asked to raise the healthy leg, the paralysed limb contracted and pressed strongly against the bed. The same absence of the sign was noted in a case of hysterical hemiplegia when the patient was told to raise the paralysed limb.

Dr. P. Zenner of Cincinnati has confirmed[2] the observations of Dr. Hoover. In a young man with organic right-sided hemiplegia from a tumour of the pons, when the patient raised the left leg there was no movement of the other; but when he was told to try to raise the paralysed leg it did not move, but the left heel was dug into the bed. The second case was that of a woman, aged 28, suffering from hysterical hemiplegia and hemianaesthesia on the right side following a shock. When she was asked to raise the paralysed right leg there was no movement either of that leg or the other, but when she raised the sound limb the right heel was pressed into the mattress.

These observations have been further confirmed by Dr. J. Lhermitte.[3] Having looked for the sign in normal persons and found it constant, he examined fourteen cases of organic hemiplegia in the Salpêtrière. At first he thought that it was absent in some old cases, but further investigation proved that this was due to the patients being too lazy to make the necessary effort, and on persisting he could always obtain distinct movement on the sound side. This movement seemed to be in proportion to the extent of the hemiplegia, and in those who had nearly recovered it was present to about the same extent as in healthy persons, while it could be made more manifest by resisting slightly the elevation of the paralysed limb. On the paralysed side the movement is naturally less developed than on the sound side and is always absent when the hemiplegia is complete; if it is spastic the sign is generally equal on both sides. Dr. Lhermitte examined two cases of hysterical hemiplegia, the first being a young woman, aged 21, who without apparent cause complained of a pain in the left hand which was soon followed by stiffness of the fingers and complete contracture of the left arm; a month later similar phenomena showed themselves in the lower extremity, the foot assuming a position of forced equino-varus, the leg being extended on the thigh and the thigh extended on the pelvis; the great toe was hyper-extended and its second phalanx flexed; the patellar reflexes were lively on both sides, but rather more on the paralysed side; the plantar reflex was flexor on the right but on the left tickling the sole of the feet determined no change in the position of the great toe. When the patient was told to raise the spastic limb, the movement being slightly resisted, there was energetic counter-pressure by the sound heel, and when the sound leg was raised there was exaggeration of the rigidity, and the heel was pressed firmly into the bed. This result pointed to an organic cause, but Dr. Lhermitte does not accept this conclusion, as he thinks the spastic condition interferes with the sign. In another case, where the hysterical paralysis was flaccid, the test was valid; this was a patient aged 54, the subject of major hysterical attacks, in whom, hypnotic sleep having been induced, a right-sided hemiplegia was developed by suggestion. When lying flat the patient could easily raise the left leg, while all movement of the right side was impossible; if she was told to raise the paralysed limb there was absolutely no contraction in the muscles of the left leg, while, when she raised the left leg, the hand placed upon the right thigh perceived slight movements in the biceps and semimembranosus. Lhermitte meets the objection that hysterical hemiplegia so induced is not identical with ordinary functional paralysis by quoting Babinski's authority for the statement that hysterical paralysis may be reproduced by suggestion in some subjects who are hypnotisable, and that the identity of these two kinds of paralysis seems to show that the paralysis which occurs in hysteria has its origin in suggestion or autosuggestion.

The method of examination is easy, but wider experience is needed to show to what extent the test can be relied on as a basis for an opinion in medico-legal cases.

[2] Ibid., October 17th, 1908.
[3] *La Semaine Médicale*, 1908, p. 565.

POSTAL OFFICIALS AND VACCINATION.

AN announcement has appeared to the effect that the Postmaster-General has modified the regulations of the service as regards vaccination. It is stated that in future candidates for Post-office employment who have conscientious objections to *revaccination* may be allowed exemption therefrom on making a statutory declaration to the effect that they conscientiously believe that revaccination would be prejudicial to their health. The Postmaster-General has refused to grant exemption from primary vaccination. If this accurately states the decision, a most unsatisfactory, and scarcely comprehensible, state of affairs is created. The antivaccinators who have clamoured for the removal of vaccination as a condition of employment will not be silenced or appeased by this change as a departmental answer to their deputation pleadings. This concession, even if it be regarded by the antivaccinators as a real concession, will be to them most unpalatable, since vaccination still remains a condition of employment. To those who are familiar with the evidence in favour of vaccination and revaccination, the decision will seem unfortunate, and the principle on which the ruling is based requires explanation. Evidence of the special risks of infection to which postal officials are exposed, and the protection afforded by revaccination, was given before the Royal Commission on Vaccination. The Final Report of the Commissioners states (par. 340) that Sir Charles Dilke, speaking in June, 1883, made the following statement about those employed in the postal service in London: "In the case of persons permanently employed in the postal service in London, averaging 10,504, who are required to undergo vaccination on admission unless it has been performed within seven years, there has not been a single death from small-pox between 1870 and 1880, which period included the small-pox epidemic, and there have only been 10 slight cases of the disease. In the telegraphic service, where there is not so complete an enforcement of vaccination, there have been only 12 cases in a staff averaging 1,500 men." The Commissioners, commenting on this, draw attention to the fact that many of the persons so employed become subject, in a degree exceeding that of the population at large, to the risk of contagion, and emphasize the fact that the period referred to in the evidence above given includes that of the epidemic

in London of 1870–2, when there were so many attacks and deaths from small-pox. "It is noteworthy," continues the report, "that, in the year 1892, 12 "officers were absent from duty on account of the "presence of small-pox in their homes; in 1893, 44; "and in 1894 as many as 53." Possibly the Postmaster-General thinks the exemptions may not be sufficiently numerous to constitute a serious risk to the service, for it must be admitted that the presence of evidence of primary vaccination in the candidates for employment who are themselves healthy should tend to destroy the argument that revaccination would be prejudicial to their health.

THE INFLAMMABILITY OF FLANNELETTE.

THE question of the inflammability of flannelette has aroused a good deal of discussion lately among the public and in the press, and is at the present moment occupying the attention of the officials at the Home Office, who are carefully investigating the alleged dangers attached to this material. Flannelette, which is, of course, a cotton fabric, and not woollen at all, has the great advantage of being cheap and warm. It is an undoubted boon to the poor, who find it impossible to buy flannel on account of its cost. There is no substitute for it which gives the same amount of warmth, within reach of the purse of the poor. But it has the great disadvantage of being very readily inflammable. Methods have been suggested to minimize or do away with this dangerous quality of flannelette. The first of these is to soak the material in various chemical substances before it is sold, and the manufacturers claim that flannelette is rendered permanently flame-proof by this means. As a matter of actual experiment it is found that the chemical which impregnates the material is washed out, or loses its efficiency after a very few washings, and the fabric burns much more readily than it originally did, and in some cases as readily as ordinary flannelette. The cheapest variety of patent material costs 6¾d. a yard; a cheap flannelette can be purchased for 2¾d. or 3¾d. a yard. Is it, then, reasonable to expect the working woman, whose income is reckoned in shillings, to pay this increased price for advantages so very fleeting and questionable? The second method, and one which is just now being much recommended, is to impregnate the material, at each time of washing, with chemicals which render it non-inflammable. Various substances are now on the market for which it is claimed that, for a very small sum and with very little extra trouble, the flannelette washed in them is rendered non-inflammable. Among the materials employed are borax, alum, oxide of tin, and patent preparations such as Flameoff, etc. The results of experiments with these various preparations show that some of them —for example, Flameoff and borax—are certainly effectual in very considerably reducing the inflammability of flannelette, others—such as alum—make very little, if any, difference. But the most serious objection to all these various chemicals is the fact that it is necessary to use them with each washing, and this alone—involving as it does extra trouble and expense—is sufficient to prevent their general employment among the poorer classes, where practically all the burning fatalities occur. Much more important than any special treatment of flannelette by chemicals or otherwise, useful as this may be as an additional precaution in diminishing deaths from burns in children, is the employment of some method for preventing fire reaching their garments, for *all* clothes, of whatever material, are inflammable—some, of course, like flannelette, much more so than others. It is found that in about 85 per cent. of inquests on deaths from burning in children the absence of fireguards was a direct cause. In the new Children Act, which came into force on April 1st, there is a clause which imposes a specific penalty on a person in charge of a child under 7 years if, owing to neglect of reasonable precautions to guard an open fire, the child is seriously burned or scalded. It is to be hoped that this enactment may lead to the more universal adoption of protective fireguards and so save the lives of many valuable future citizens.

LIABILITY OF HOSPITALS.

THE question whether the governors of a hospital can be held liable at law for injuries sustained by a patient is by no means easy to answer. It must be shown, of course, that the injury sustained was the result of negligence, and that the act or omission which occasioned the injury was the act or omission of some person in the employment of the hospital authorities. The fact that the treatment is gratuitous does not appear to affect the question. In a case which is reported elsewhere in this issue, an action was brought to recover damages from the governors of St. Bartholomew's. The plaintiff, a medical practitioner, suffering from sciatica, went to the hospital to be examined under an anaesthetic. The examination was conducted by a member of the staff. It was alleged that while the patient was on the operating table his left arm was scalded by being brought into contact with a hot-water tin, and that his right arm was injured by pressure, and that in the result paralysis supervened to such an extent that he would never again be able to practise his profession. At the conclusion of the opening of the plaintiff's case it was submitted that the action did not lie against the governors, inasmuch as it was not shown that the injuries (if any) were caused by any one for whose acts they were responsible. Counsel for the plaintiff conceded that the governors were not responsible for the surgeon who conducted the operation, as he was not their servant. Mr. Justice Grantham decided to hear the evidence of the plaintiff and his witnesses, and having done so, came to the conclusion that there was no case to go to the jury. His decision was for the most part based upon the inconclusive nature of the evidence. He pointed out that there was no proof of negligence on the part of any one in particular, and he also dwelt on the fact that the patient was predisposed to the injuries sustained owing to the sciatica from which he suffered. The interesting legal question was not therefore authoritatively decided. There is no English case which throws any certain light upon it. In a recent work entitled *The Law of Hospitals*, by A. T. Murray, the author states that "a hospital is responsible to "the patient for the negligent acts of its doctors or "nurses in the course of their treatment of any such "patient." He admits, however, that this is a mere expression of his opinion based upon cases relating to analogous points. In one case (Evans *v.* Liverpool) Mr. Justice Walton held that the authorities responsible for a rate-supported hospital were not liable because a member of the staff had allowed a scarlet fever patient to leave the hospital so soon that he communicated the disease to other children of the plaintiff. That decision was mainly based on the principle that a corporation which owns a hospital does not undertake the duties of medical men, or to give medical advice, but that the patients in their hospitals shall have competent advice and assistance. It was admitted that the doctor responsible for the discharge of the patient was a competent medical man.

There are certain American cases on the question, but as they conflict one with another they are of little value to an English lawyer.

SPIROCHAETES AND MOUSE CARCINOMA.

THE record of negative results is often of considerable value, for not only does a negative result, if confirmed, narrow the problem down, but it not infrequently indicates the direction in which further research may prove successful. Negative results have other uses. In a hopeless disease, the nature of which is still shrouded in darkness, the unfortunate victims too often catch at any straw, no matter how frail, which may be held out. The public is at all times credulous about remedies which have not obtained the support of the profession, and whether the reputed remedy is a secret quack preparation or a discovery of one day, the average patient suffering from such a disease as cancer will pin his faith on it, and allow the last hope —the hope of getting rid of his disease by surgical means—to fade away. But it is not only the devising of alleged cures which may be mischievous, but the supposed discovery of the cause of cancer, which has been made about once every two months for some years past, may be almost equally mischievous, for before it can be shown that the discovery is based on a false observation, either the discoverer or someone else builds up a treatment on this unstable basis. It is therefore of great value to learn of distinct negative results with regard to the possible causation of cancer. Professor Gaylord found a spirochaete in primary and transplanted carcinoma of the breast of the mouse in 1907. He now[1] comes forward in true scientific spirit and shows that this spirochaete has no etiological connexion with the malignant disease. The spirochaetes were found by Tyzzer in mouse tumours, and Deetjen has also found them in something approaching regularity in mouse carcinoma. Since his original publication Gaylord has examined a series of 48 tumours. In 4 of these the disease had advanced so far that contamination with other micro-organisms rendered the search fruitless. In 4 further tumours no spirochaetes were found, while in the remaining 40 they were found at the periphery of the tumour. He then turned his attention to other mice in the same breeding-places as the cancerous mice had come from, and found that out of a series of 10 no fewer than 7 harboured spirochaetes in their blood. In a second series of mice received from Columbia, 11 out of 15 showed spirochaetes in the blood. Other series yielded similar results. He was therefore able to determine that the spirochaetes were present in about 70 per cent. of apparently normal mice. He adds that the absence of spirochaetes in human cancer and in cancers of other animals, and the fact that several strains of transplantable mouse tumour have been examined in vain for spirochaetes, justify him in concluding that the spirochaetes are not the cause of mouse carcinoma. This conclusion appears to be sound, and may be advanced as a further argument against the parasitic theory of carcinoma.

[1] *Berl. klin. Woch.*, December 28th, 1908.

PRIMARY PERITONEAL OR ABDOMINAL PREGNANCY.

ECTOPIC gestation is of special interest to the profession in general, rather because it is a cause of internal haemorrhage than on account of its peculiarities from an obstetrical or pathological standpoint. The labours of Lawson Tait and his experiences as an operator taught us that the Fallopian tube undergoes changes prejudicial to the patient when it becomes the seat of pregnancy, and that in early pregnancy the bleeding or ruptured tube may be removed without much difficulty and with little risk. Tait believed that all ectopic pregnancies were originally tubal, from which it followed that early diagnosis and removal of the sac would save every case, though operations late in such pregnancies were, and remain, very hazardous. Kouwer and Van Tussenbroek, followed by Anning and Littlewood, Octavius Croft, and others have shown on evidence accepted by leading authorities that ectopic pregnancy may begin in the ovary. The surgery of primary ovarian pregnancy, however, is little different from that of primary tubal pregnancy, for when early rupture occurs in either form both tube and ovary have to be taken away. The possibility of a primary peritoneal or abdominal pregnancy remains doubtful, and much further information is required, for while the amputation of a Fallopian tube with its fetal sac is not very difficult or dangerous in early pregnancy, a fetal sac sessile on the peritoneum would, theoretically, be very dangerous to remove almost from the first, as the operator could hardly feel sure how to control its blood supply. A case recorde recently by Gröné, of Malmö, Sweden, seems to show that primary peritoneal pregnancy may occur, and—what is of equal importance—that in its earliest stages at least its removal is neither difficult nor dangerous.[1] A woman aged 23 was admitted with symptoms of internal haemorrhage following colicky pains fourteen days earlier. The periods had been quite regular for four months, yet she had not weaned her last child, who was 7 months old. The physical symptoms indicated right tubal gestation. Prag of Malmö operated with the assistance of Gröné. The peritoneal cavity contained over a pint of recent blood and clot, and the bleeding was seen to issue from a sharply-defined raw surface as big as a shilling, on the pelvic peritoneum just below the brim of the pelvis; it was bounded anteriorly and on its median aspect by the right round ligament, and posteriorly and to the right by the caecum. This raw tissue was excised, together with a narrow tract of the surrounding peritoneum, and the serous membrane closed by suture. The haemorrhage ceased at once and for good. Two small, red bodies were found lying loose in Douglas's pouch. The left Fallopian tube and ovary were to all appearances absolutely healthy, and so were the right appendages, but it was thought safer to remove the latter. The patient made a speedy recovery. The parts removed were carefully examined in the Pathological Institute, Lund, Sweden, and Gröné publishes macroscopic drawings and photomicrographs. The raw surface in the peritoneum was made up of tissue, including villi, syncytium, and other elements peculiar to the fetal membranes, implanted on the serous membrane, just as such tissue is found implanted on the tubal mucosa when the Fallopian tube is the seat of pregnancy. The two bodies in Douglas's pouch were without doubt products of conception. The right tube was cut up into sections, none of which showed, under the microscope, the slightest trace of recent relations with an ovum. No trace of a fetus could be detected, as is the rule when an ectopic gestation is interrupted in its earlier stages. Gröné, who has reported the case with great care, seems justified in maintaining that it was a genuine primary abdominal pregnancy. If so, it seems clear that at the beginning this condition may not present any very formidable difficulties; it is remarkable how easily Prag succeeded in what is the first aim of the operator, the stopping of haemorrhage.

[1] Ein Fall von primären Peritonealschwangerschaft. *Zentralbl. f. Gynäk*, No. 2, 1909, p. 45.

PETER OF SPAIN, THE OCULIST POPE.

THE thirteenth century has been described as the greatest of centuries, partly because the foundation of some of the chief universities, including Paris, Bologna, Oxford, and Cambridge, may be assigned to it. It witnessed also a remarkable development of architecture, and to it we owe some of the most famous castles and municipal buildings, and the beginnings of many of the finest cathedrals of Europe. This epoch saw the rise of a great national literature in nearly every country in Europe: the Cid of Spain, the Arthur legends in England, the Niebelungen and the Meistersingers and Minnesingers in Germany, the Romance of the Rose and the Troubadours in France, and Dante in Italy. It is no surprise, therefore, to find the first origin of ophthalmology in this century. Bernard Gordon, the Scotsman, teaching medicine at Montpellier, had advised the use of spectacles for presbyopia, and in the same century Pope John XXI, Peter of Spain, produced a little volume on diseases of the eye. In the current number of *Ophthalmology*, Dr. Walsh gives a short account of this book, which is of great interest to students of medical history. It possesses great literary value, because it is one of the earliest books written in the Italian language, and is frequently referred to in the dictionary composed by the Accademia della Crusca. It commences with the usual invocation, "*In nomine Dei Amen.*" Then we are given an account of the anatomy of the eye, which is said to be composed of seven tunics and three humours. The humours are the albugineous (aqueous), the crystalline, and the vitreous. The first tunic is the retina, and Peter seems to have had some vague notions of its importance in vision. The choroid he calls the secundine tunic, and then he mentions the scliros (*sic*). The fourth tunic is the *tela aranea* (the spider's web), by which it is believed the iris was intended. The fifth tunic he calls the uvea, and the last two have their present names, the cornea and the conjunctiva. Peter recognizes eight ocular muscles, the four recti he calls lacerti—that is, reins. He had a good knowledge of many diseases. Squint he attributed to an affection of the eye muscles, but this, he said, was due to a defect in the brain, thus anticipating Worth's theory of the congenital absence of the fusion centre. Pterygium is described as ungula, from its fancied resemblance to a nail; it was to be cured by an application of eel's blood. Blepharitis was to be treated by epilation. Lacrymal fistula is said to be very difficult to cure, so difficult, indeed, that it must be exorcised. Peter describes cataract, calling it "water which descends into the eye." This is but a translation of the Arabic term for the disease, *el ma an-nazil fil ain.* The modern *fellaheen* in Palestine call it "*moye zerka*," or blue water. He does not mention couching, but this operation may have been described on some of the lost pages of the manuscript. The eye, he says, may be affected by two kinds of hardening—*petrositassor petrosezza* or *tenebrosité* seems to refer to orbital phlegmon, while *dureté* may be glaucoma. For further details of this most interesting book the reader is referred to Walsh's very readable article.

THE CONDUCT OF COURTS.

HUMAN brains being as they are, it is almost inevitable that on most subjects there should be more or less marked difference of opinion; hence it is natural that all judges should not be of one mind as to what kind of conduct on the part of the president of a court is best conducive to the ends of justice and to the preservation of his personal dignity. Equally natural is it that those who are not judges should form somewhat varied opinions on the same points. Thus some rather despise judges whose fashion it is to treat witnesses appearing before them with unvarying courtesy, to receive their statements, however remarkable, without open betrayal of disbelief, and carefully to refrain from expressing opinions based neither on the evidence before them nor on any real knowledge of the subject of their discourse. Others, on the contrary, admire such judges, and regard those who browbeat willing witnesses, and constantly air their own views, as persons mistakenly placed in a position which is always one of authority, and should also be one of immovable dignity. Clearly, if one of these views is right, the other must be wrong; but to the non-legal mind it is not altogether easy to decide between them. Doubtless, on theoretical grounds, a good case could be made out in favour of the one method or the other, but no practical weight would attach to any decision not based on a careful comparison of the net results in an equal and sufficiently large number of cases. Such a comparison is at present quite impossible, because ever since the disappearance of judges of the type of Judge Jeffreys or Lord Braxfield the vast majority of cases have been tried by persistent adherents to the first-named method, which may be described as *suaviter in modo, fortiter in re.* Nevertheless, the difficulties in the way of a really scientific and satisfactory solution of the problem are not insuperable. In the course of time an industrious searcher might amass, say, 100 complete records of cases tried on the other or witness-bullying and inane-observation principle, and thus secure the lacking factor for a comparison of the kind desired. It would be a laborious task, but the researcher might get a useful hint as to promising prospecting grounds from those already well acquainted with the methods of different judges. The newspapers likewise occasionally furnish what seem like useful clues on the subject, as, for instance, in the case of one particular trial at the last Dorchester Assizes. If correctly reported, this was an admitted case of attempted suicide, and the prisoner's friends, deeming him a sufferer from melancholia, seem to have instructed counsel to endeavour to secure for him treatment conducive to his recovery. To this end a medical man who had treated the patient for some weeks after his attempt to cut his throat was put into the witness box, and in answer to a question on the subject gave a clearly worded and appropriate reply. It does not, however, seem to have pleased the presiding judge, for his lordship at once broke in with a flat contradiction; the statement was nonsense, and he himself knew much better. On the witness replying that he had only given his opinion, the judge said he did not care for his opinion, and ordered him out of the box. Practically the opinion expressed by this witness was to the effect that the recovery of a patient suffering from melancholia would best be ensured by his treatment in a civil asylum, prison environment in the circumstances being undesirable. This would seem in itself a sound view to take; but of course, after the dictum of this learned judge, we must believe that it is not so. As it is never pleasant to a man to have his statements aspersed as nonsense by a person to whom he cannot safely reply, it seems possible that this medical witness may have been rather annoyed by the incident. All medical men, however, are more or less philosophers, so it is to be hoped that he consoled himself by the reflection that this judge must be one of those who deem elevation to the Bench a diploma of omniscience, and ordinary courtesy as inconsistent with the due administration of justice.

DEATH CERTIFICATION AND CORONERS' JURIES.

A BILL, at present awaiting consideration by Parliament, proposes to relieve coroners' juries of the duty of viewing a body before proceeding to their inquiry; but Mr. F. W. Lowndes, surgeon to the Liverpool Police, who has had a wide experience in medical jurisprudence, seems disposed to believe that the best thing to do with coroners' juries would be to abolish them altogether.[1] The suggestion is notable, and to some minds may seem anarchical, since the crowner's quest is an institution of such hoary antiquity that it now appears to be an essential part of the British constitution. Coroners' juries, indeed, have had their share in the administration of justice for so many centuries that their origin is not easy to trace. Possibly they date back to the days when the High Court of Justice, from the inquest room to the Court of Appeal, was entirely represented by a woad and skin clad village headman and his elders; still, in spite of its novelty, the suggestion is one for which at first sight, at any rate, there would seem much to be said. It is, for instance, by no means clear that the finding of a coroner's jury is an essential wheel in the machinery of justice. There are many British colonies whose legal procedures are based more or less on those of England, but which nevertheless get on perfectly well without coroners' juries; and north of the Tweed no summons to act as a juryman at an inquest has ever been issued. Even in England the part played by a coroner's jury would seem much more prominent than important. In the majority of inquests there is no room for real doubt as to the responsibility for the death of any persons connected with it. There are other cases, of course, in which criminal issues are involved, and there may be room for doubt as to the category in which the crime should be placed, and as to whether the name of any particular individual should be specifically coupled with the verdict; but even in these the points raised would seem at least as likely to be properly decided by one intelligent and experienced man as by twelve men of no particular education and no special experience whatever. Furthermore, the fact that coroners' inquiries and magisterial trials may often be seen proceeding side by side would seem to indicate that even now the part played by coroners' jurymen is in a measure superfluous. The police, indeed, are in no wise bound by any conclusions a coroner's jury may reach, and it would be possible to secure the trial and conviction of a man for murder or manslaughter in a case in which a coroner's jury had failed to return a verdict of any kind. There is room, of course, for two opinions as to the value of the work done by coroners' juries, but it seems clear that a good case might be made out for relieving citizens of the duty of taking part in inquiries of this order. The whole subject is in a measure bound up with that of death certification, the main theme of Mr. Lowndes's paper. On that there is no room for difference of opinion. As we pointed out a few weeks ago, more than fifteen years have passed since a special committee of the House of Commons made a series of recommendations on the subject. They have been generally accepted as perfectly sound, and it is lamentable that there should be such delay in giving any effect to them.

[1] *Liverpool Medico-Chirurgical Journal*, January, 1909.

MEAT WINES.

WE have received from Mr. D. Innes Smith, Managing Director of Bendle, Ltd., a letter protesting against the application of the term "meat extract" to the meat substance contained in the "Meat-Port Nutrient" sold by the company. Mr. Innes Smith in his letter refers to the material in the wine not only as "meat substance" but also as "the digestive "products of meat or proteins," and states that all authorities admit that such products are available for immediate nutrition. We are very glad to allow Mr. Innes Smith to make the correction, but we may point out that in the article it was distinctly stated that it was not possible, without a complex analysis of a very large quantity, to determine positively by analytical methods whether meat extract only, or some other meat preparation, was contained in the wines. But in calculating the amount of the substance derived from meat in the wines examined from the amount of nitrogen found, it was, for the purpose of comparison, calculated in each case as meat extract, and this was distinctly stated in the article. If, on the other hand, the nitrogen be calculated into its equivalent as protein the result reached is 1.4 per cent. in Bendle's Meat-Port Nutrient. It might be added that one of the main objects with which the analyses were undertaken was to determine the alcoholic strength of meat wines which are largely advertised. The fact shown by the analyses which is of special interest to the medical profession is that the meat wines examined were found to contain approximately the same quantity of alcohol as is ordinarily found in port wine.

HEART STRAIN AND OVERSTRAIN.

THE Marathon race, and the object lesson which it has afforded as to the limitation of the powers of human muscle, will in all probability demonstrate in time to come the truth of warnings recently uttered as to the possible overstraining of the powers of the human heart. This latter aspect of the question has been already investigated by Dr. Theodore Schott at Nauheim, and in a fourth enlarged edition of his pamphlet on the overstrain of the heart he has recorded some further observations carried out by the aid of x rays and the orthodiagraph. While every one recognizes the fact that over-exertion produces an excessive heart beat and a varying degree of dyspnoea, the exact condition of the heart under such circumstances does not appear to have been very closely studied, if we may judge from the references to the subject in the English textbooks. It is assumed that a certain amount of distension of both ventricles must ensue during great muscular exertion, and that the occurrence of dyspnoea is a measure of the extent to which the latent reserve of heart force is being drawn upon. It is known that dyspnoea is all the more likely to occur if the ventricular wall is weakened from any cause; but it has been shown that a very marked thinning of the ventricular wall may be present without any *post-mortem* evidence of dilatation. Dr. Schott's endeavour is to show that actual acute dilatation takes place under stress whenever the symptoms of excessive palpable heart-beat and marked dyspnoea are present. He rightly accords to Dr. Peacock the distinction of having first pointed out the danger of heart strain, but he shows that much more attention has been paid to the influence of infective disease as a cause of myocarditis and endocarditis and subsequent dilatation, than to the more immediate influence of overstrain from excessive exertion. Experiments carried out upon healthy subjects after vigorous wrestling, with and without the support of a waistbelt, are carefully recorded, and many cases are quoted in detail to prove the occurrence of acute dilatation of the heart under different conditions, and especially in cases where some previous cause of heart weakness has been present, although unsuspected by the patient

or his friends. The dangers of excessive dancing while wearing tight stays are emphasized and illustrated by some striking cases. The use of *x* rays and the orthodiagraph would seem to have fully confirmed the accuracy of previous observations by percussion alone, but it is clear that orthodiagraphic demonstrations are attended with so many sources of fallacy that too much reliance must not be placed upon them.

SUMMER COURSE OF OPHTHALMOLOGY AT OXFORD.

The sixth annual course in the department of ophthalmology of the University of Oxford will begin on Monday, July 5th, and terminate on Friday, July 16th. The main idea of the course is to demonstrate on actual patients, as far as possible, the whole range of ophthalmology, in order to make the reading of a textbook more profitable than can be the case when reliance has to be placed on pictures alone. The first part of the course will be concerned mainly with the practical examination of eye patients, the use of the ophthalmoscope, and the estimation of refraction. During the second part the work will be more specialized, and the lectures will be delivered by various ophthalmic surgeons. As on previous occasions, the last two days will be devoted to addresses, special demonstrations, and the examination of interesting and unusual cases. The fee for the course is five guineas. Further particulars can be obtained from Mr. Robert Doyne, M.A., F.R.C.S., Margaret Ogilvie Reader in Ophthalmology in the University of Oxford, 30, Cavendish Square, London, W.

DISTRIBUTION OF DIPHTHERIA ANTITOXIN IN NEW YORK.

The New York State Health Department is about to begin the distribution of diphtheria antitoxin in syringes, as provided for by the legislature last year. The syringe to be used has been especially devised for the purpose, and as this form of distribution is expensive, on account of the cost of the outfit, and as it is quite possible to prepare a syringe once used for use a second time, the distribution of these syringes will be made on the express understanding that medical practitioners receiving the package of antitoxin containing the syringe shall return the outfit immediately after the employment of the antitoxin to the State Hygienic Laboratory. The postage for such return will be provided. The directions for the use of antitoxin have been carefully revised, and these, with blanks for making reports of results, to be filled out and returned to the department on the termination of the case, will be sent out with each package.

DEATH OF PROFESSOR GAMGEE.

We regret to announce that Dr. Arthur Gamgee, Emeritus Professor of Physiology in the University of Manchester, died in Paris on Monday morning last, at the age of 67. He had travelled over to Paris on March 22nd, intending to pass two or three days with his old friend Professor Kronecker, of Berne, and to return to England with him on March 26th. It seems clear that Professor Gamgee had already contracted influenza before leaving London, for on taking his temperature in the train to Newhaven, he found that it was 103°; nevertheless he went on by the night boat, but grew progressively worse; the immediate cause of death was congestion of the lungs.

Dr. S. Squire Sprigge has been offered and has accepted the editorship of the *Lancet*. Dr. Sprigge, who has held for a good many years a responsible position on the staff of our contemporary, is the author of the well known and very interesting *Life and Times of Thomas Wakley*.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

Anaesthetics.—On Thursday in last week Dr. Cooper introduced a bill to regulate the administration of anaesthetics. It proposes that on and after January 1st, 1911, no person shall be registered by the General Medical Council unless he submits satisfactory evidence that he has received instruction in the administration of anaesthetics, and that after that date any person not a registered general practitioner who shall administer to any person any drug or gas vapour, etc., with the object of producing unconsciousness during any operation, examination, or procedure or childbirth, shall be liable on conviction to a penalty of £10, and on second conviction £20, provided that no person would be liable if acting under the immediate personal supervision of a registered medical practitioner, or believed delay would endanger life. Power is given to the General Medical Council to make the necessary regulations; and the bill would further enact that a registered medical practitioner shall not give a certificate of death in the case of any person who has died during the administration of an anaesthetic, under a penalty of £5. There is a proviso to the effect that nothing in the Act shall prohibit a person registered under the Dentists Act before the commencement of this Act from administering an anaesthetic during a dental operation or procedure. The bill is backed by Sir Walter Foster, Sir William Collins, Dr. Rutherford, Sir John Benn, Mr. Acland Allen, Mr. Barnes, Mr. Bertram Straus, and Mr. H. Carr-Gomm. It is most probable that the bill, if read a second time, will be referred to a Select Committee to inquire into the whole subject.

Vivisection.—There are four Bills before the Commons dealing with experiments on animals. One, the Dogs Protection Bill of Sir F. Banbury, exempts dogs from all experiments under penalties; a second, called the Cruelty to Animals Bill (No. 2), has been introduced by Mr. George Greenwood and ten other members, to restrict and regulate all experiments on animals, to provide for licensing persons to experiment under very strict conditions, and to increase powers of inspection. Two other bills, standing in the names of Sir George Kekewich and Mr. Hodge, called respectively Prohibition of Vivisection and Vivisection (Abolition) Bills, aim at the suppression of experiments on live animals altogether. None of these bills have a good place, but they require to be watched, as attempts may be made to get one of them read a second time late at night if occasion offers.

Nurses' Registration Bills.—There are two bills before the Commons dealing with the Registration of Nurses, the one promoted by Mr. Munro Ferguson and a number of other members, and the second introduced by Mr. Findlay, Mr. Claude Hay, and others. As business stands, neither of these bills has much chance of passing unless the Government decides to give facilities to one of them. The Prime Minister is to be asked to do this by the promoters of Mr. Munro Ferguson's bill, and he is to be asked to receive a deputation to urge the claims of the subject to legislation at an early date.

Small-Pox at Bristol.—Mr. Cave asked the President of the Local Government Board last week whether an outbreak of small-pox had occurred at Bristol; whether, in spite of the advice of the Board's inspector, the board of guardians refused to make special arrangements for the vaccination of unvaccinated children and for revaccination; whether, on the Local Government Board themselves instructing the vaccination officer to provide special facilities, the health committee refused to permit the issue by their medical officer of bills notifying the names of the vaccinators and the places where they would attend for vaccinations; how many cases of small-pox had already occurred in the city, and how many had proved fatal; and what steps the Local Government Board proposed to take in the matter. Mr. Burns said that the answer as regards the first two points in the question was in the affirmative. He understood from a newspaper report of the meeting of the Health

Committee on March 16th that the Committee resolved that no further bills should be issued by the medical officer of health, but that if necessity arose the Committee should be called together. Bills to the effect stated in the third part of the question had already been issued by the medical officer of health. Up to the morning of March 20th 31 cases of small-pox had occurred in Bristol and its vicinity. Three deaths were known to have occurred up to March 17th. He had caused one of the medical inspectors of the Local Government Board to pay two visits to Bristol and the neighbourhood owing to the outbreak, and he had conferred with the authorities and officers concerned as to the precautions which should be adopted, and various measures had been taken accordingly.

Vaccination.—On Tuesday Mr. Robertson put several questions, in the absence of Mr. Lupton, with reference to vaccination. The first referred to the death of a child named Lomas at Hanley, who was vaccinated in January by Dr. Clare, the public vaccinator; about a week after a rash appeared, and an abscess formed under the arm. The abscess was lanced, and the child suffered a great deal and died in February. It was asked whether the President of the Local Government Board would stop the issue of vaccine matter until he had a supply that would not produce such disastrous results. Mr. Burns said that his attention had not been called to this case prior to the question. He had made inquiry about it, and was informed by the public vaccinator that in his opinion the abscess was not due to vaccination, that Dr. Phillips and Dr. Browne, his assistant, who attended the case, were of the same opinion, and that he believed Dr. Read was so too, but he was absent from home. The public vaccinator added that eleven other children vaccinated by him from the same lymph did well. He saw no reason to interfere with the issue of lymph by the Local Government Board. In a subsequent question Mr. Robertson called attention to an alleged death from vaccination at Enniscorthy. Mr. Cherry replied that in December last year the Guardians of Enniscorthy Union requested the Local Government Board to hold an inquiry with a view to ascertaining whether the death of Ellen Cullen was due to vaccination. The board communicated with the doctor who had performed the vaccination in September last, and were informed by him that shortly after vaccination the child got chicken-pox, which was at that time prevalent in the neighbourhood; that when nearly well she suffered from a very severe attack of eczema; that the combined trouble and resulting exhaustion proved fatal to her; that she had been vaccinated with lymph obtained from the board's vaccine department, and that the vaccination was normal and had nothing to do with the subsequent complaints. The board had forwarded a copy of the doctor's explanation to the guardians, who took no exception to the opinion he expressed. He saw no reason for holding an inquiry. With reference to the lymph used in Ireland, Mr. Cherry said that the Local Government Board informed him that the glycerinated calf lymph procured by them under contract from the National Calf Vaccine Institute, Sandymount, Dublin, was, before issue from the board's vaccine department, tested as to its efficiency and subjected to careful bacteriological examination. Its purity was thus insured. The dispensary medical officers throughout the country being aware of these arrangements to secure proper lymph, a further certificate of the purity appeared to the board to be unnecessary.

Tuberculous Cows.—Mr. Tyson Wilson called the attention of the President of the Local Government Board to a case in which cows condemned for tuberculosis of the udder had been sold, and asked him to inquire whether the cows had been killed and the meat sold to the public, or whether they were still being used for dairy purposes. Mr. Burns answered that he had made inquiry on this subject. He understood that on January 26th last the veterinary inspector of the London County Council certified three cows on this farm to be suffering from tuberculous disease of the udder, and that Mr. Goulding undertook not to use the milk from these cows. He also understood that the cows were afterwards sold, and that they eventually found their way to Salisbury Market, where they were again sold, and that from that time they were lost sight of. He had not been able to obtain any further information with regard to them.

Sanitary Sleeping Quarters for Seamen.—Last week Mr. Lewis Haslam called attention to the report of Dr. Howard Jones, of Newport, relating to the insanitary condition of the seamen's accommodation in many ships, and asked the President of the Board of Trade to take steps to improve the conditions. Mr. Churchill replied that on the receipt of the report in October last the Board of Trade at once made inquiries into the particular case referred to by the medical officer, and the defects which had been observed were made good. Similar action was always taken when particular cases were reported by the local sanitary authorities. The Merchant Shipping Acts gave full power to secure that crew spaces on British ships should be in all respects available for the proper accommodation of the men who occupied them. These provisions did not apply to foreign ships.

The Factory Surgeon at Horwich.—On Monday Mr. Tyson Wilson asked the Secretary of State for the Home Department whether he had received a petition against the appointment of Dr. Rigby, of Adlington, as factory surgeon for the Horwich district; whether he was aware that the gentleman appointed lived a considerable distance from the district in which his duties were, that there were six medical men resident in Horwich who were all fully competent and qualified to perform the duties, and that inconvenience had been caused by the appointment; and whether he would reconsider it, with the view of appointing a resident medical man to the position. Mr. Secretary Gladstone replied that he had received two letters from the urban district council of Horwich on the subject. The facts were: Horwich and Adlington were contiguous districts, and, prior to the appointment referred to, had each a certifying surgeon. As, however, there were few factories in the two districts—thirty in Horwich and seventeen in Adlington—and the area was small, it was decided, in accordance with the usual policy of the department, on the recent retirement of the Horwich surgeon, to amalgamate the districts; and the appointment for the combined district was given to Dr. Rigby, who was already surgeon of Adlington. Dr. Rigby lived only a short distance from Horwich (about two miles), and visited Horwich (where he had a room) at least twice a week, and oftener if necessary. He had not been able to hear of any inconvenience caused to employers by the arrangement; but the district council stated that complaints had been made of inconvenience caused to children in cases where they had to attend at the surgeon's room, and he had asked the council for further particulars.

West Bromwich Medical Referee.—Mr. Wardle asked the Secretary of State for the Home Department whether he was aware that Dr. Langley Browne, of West Bromwich, who was the medical referee under the Workmen's Compensation Act, was also a director of the Birmingham and Midland Assurance Company; and whether he would say what action he proposed to take with a view to avoiding prejudice in cases in which Dr. Langley Browne was called upon to give an opinion. The Under Secretary for the Home Department reported that the Secretary of State had not previously had this matter brought to his notice. Dr. Langley Browne, who was a practitioner of considerable standing, was a medical referee under the Act of 1897, and was reappointed under the Act of 1906. The matter would have the Secretary of State's consideration, and he would let the hon. member know the result.

Pleas of Insanity, Scotland.—Last week Mr. Watt referred to the number of serious cases in Scotland in which pleas of insanity were being accepted, and asked whether in view of the fact that such pleas depend on expert evidence, the Lord Advocate would take steps to see that the poor man suffered no disadvantage. Mr. Ure replied that his attention had not been called to the number of these cases. Where a plea of insanity was tendered, he was not aware that a poor man suffered any disadvantage as compared with a man who could afford to pay for expert evidence.

England and Wales.

[From our Special Correspondents.]

MANCHESTER AND DISTRICT.

Effects of the Poor Law Commission.

It will be interesting to see how the Chorlton Board of Guardians will receive a motion, of which notice has been given by a member of the board, to the effect that any person requiring medical relief in the union should be able to choose his own doctor and that the board should pay for such relief on a scale to be fixed. This has, no doubt, been suggested by the recommendation in the Majority Report of the Poor Law Commission, though the motion goes beyond what the commissioners actually suggest. The proposal of the report is not that paupers who have made no self-provision against sickness should be able to choose their own doctor, but that strong inducements should be offered to get all the working classes with an income below a fixed wage limit to join some provident dispensary, and only then when they have become members of a dispensary shall they have a choice of the doctors on the dispensary staff. The commissioners express a hope that in course of time it will be possible to do without the district medical officers, but evidently that is looking forward to a time when all, or nearly all, the working classes will have been induced to join some provident society, and in the meantime, until that is accomplished, the district medical officers would have to be retained as at present. Choice of doctors for those persons who make no self-provision is not suggested by the commissioners. There may be a good deal to be said for the motion which is to come before the Chorlton Guardians, but it should be perfectly understood that it is much out-bidding the Majority Report, and it would be a pity if the majority scheme should be prejudiced by an impression that it proposes such a radical change as the Chorlton Board is asked to consider.

Poor Law Medical Officer and Public Vaccinator.

At the fortnightly meeting of the same board the resignation of Dr. Mumford as district medical officer for Chorlton-cum-Hardy was accepted, and it was also decided to terminate his contract as public vaccinator for the district. It was stated that the salary paid to Dr. Mumford had been £30 a year, and that for this he had had to do a great amount of work. The position of public vaccinator which had been held in conjunction was supposed to compensate in some measure for the small salary, but last year the vaccination fees only amounted to £31. The clerk of the board said he thought a salary of £30 was totally inadequate. It may be noted that Mr. Francis Chandler, one of the Poor Law Commissioners who signed the Minority Report, is an ex-chairman of the Chorlton Board of Guardians, and in signing the report he subscribed to the following sentence: "The conditions under which district medical officers carry out their duties is as unsatisfactory as their remuneration is demoralizing." Possibly the guardians took to heart this and other similar remarks of both the Majority and the Minority Reports, for in a fit of magnanimity they resolved to advertise for a district medical officer for Chorlton-cum-Hardy at the increased salary of £40 per annum.

The Manchester Port Sanitary Authority.

A memorial has just been presented to the Manchester Port Sanitary Authority by about a score of leading shipping firms in Manchester, complaining that the methods of food inspection adopted by the authority are having the effect of hampering the trade of the port. While the memorialists approve of the principle that only sound food should be allowed to enter the port, they submit that until the inspection at other ports is made as strict as it is at Manchester, the interests of the traders of the port will be damaged. They therefore ask the authority to use its influence with the Local Government Board to have pressure brought at other ports in order that the methods of inspection may be made uniform. Dr. Dearden, the port medical officer, said that, besides Manchester, London was the only other port where the rules for inspection were properly carried out. Hull and Newcastle have also begun to put in force the regulations, but other ports show a considerable amount of laxity. As showing the necessity for strong action, it may be noted that during the past month nearly 3 tons of oranges and 5 tons of onions have been seized, and altogether 11 tons 4 cwt. of food were condemned in addition to voluntary surrenders. For some time the Liverpool Port Sanitary Authority refused to meet the Manchester authority to consider the subject, but it is now announced that a conference has been arranged. The memorial is to be sent to the Local Government Board, which is already considering how to secure a general uniformity, and it is hoped that other ports will be brought up to the standard set by Manchester and London.

CAMBRIDGE.

Medical Inspection and the Teeth of School Children.

The municipality of Cambridge is in some respects one of the most progressive in the kingdom in regard to public health. Some years ago the Cambridge Town Council appointed a medical inspector of school children, and the members were actually surcharged by the Local Government Board's auditor for doing what the Education (Administrative Provisions) Act, 1907, so soon after made compulsory. This surcharge was afterwards remitted by the Board, which however pointed out that the council's action had been illegal. Following on this, the council took advantage of the new Act to appoint in 1907 a dental inspector at a salary of £50 a year, and through the generosity of Mr. Sedley Taylor this work of dental inspection was supplemented by dental treatment, and so the first dental clinic in connexion with elementary schools in this country was established. The report of the work thus done during the year ending October 28th last has recently been published, and the results are so satisfactory that the town council unanimously decided to continue the work at the expense of the rates. The estimated cost is about £410 a year, which represents ½d. in the £. No one nowadays will question the fact that this is a wise outlay of public money, and one which will bring a large return in the way of increased health and efficiency in the rising generation. The experiment is one that is certain to be closely watched by other authorities throughout the kingdom. Cambridge is to be congratulated on the generosity and enlightenment of Mr. Sedley Taylor, who made the experiment possible, and the members of the Town Council on having so heartily taken it up.

Results of the Sewerage Scheme.

Another proof of the town's progressive spirit is furnished by a paper on "Cambridge To-day: its Health, Life, and Social Conditions," by Alderman Dr. Dalton, Chairman of the Public Health Committee. Dr. Dalton is able to show that the result of the sewerage scheme carried out in 1895 has been a material lowering of the level of the subsoil water and a remarkable concurrent improvement in the health of the district. Thus, in the period from 1891 to 1905, while the general death-rate of England and Wales has decreased by 9 per cent., that of Cambridge has decreased by 14.66 per cent.; the phthisis death-rate has declined by 20.3 per cent., as compared with 15.3 per cent. in England and Wales generally; while the cancer death-rate has declined by 22.3 per cent., although it has actually increased by 14.9 per cent. in the rest of the country during the same period. These figures are very encouraging, and are quite conclusive of the wisdom of the very costly scheme which was carried out in 1895.

Addenbrooke's Hospital.

The committee of Addenbrooke's Hospital found itself last September under the necessity of making another special appeal for increased annual subscriptions. In response, about £2,000 has been received, but of this amount only £500 represents new or increased subscriptions which will recur this year. The deficit is expected to amount to £1,300 or £1,500, and in order to place the hospital on a sound financial basis the committee consider that the annual subscriptions should be increased by £2,000 a year; at present, excluding a grant of £300 from the university, they amount to £2,844, while the income from investments was in 1907 £1,829, the expenditure was over £10,000, and the difference has been made up partly by means of collections and donations, and partly by

using legacies for current expenses. Any curtailment in the work of the hospital would be a serious matter, not only for the town and county, but also for the medical school, and it is therefore hoped that non-resident members of the university may show themselves ready to help the hospital by becoming annual subscribers.

BIRMINGHAM.

THE MEASLES EPIDEMIC.

DURING the three months ending February 27th, 2,351 cases of measles have been reported by school teachers, school attendance officers, and health visitors, and it is estimated that there have been altogether nearly 8,000 cases of measles during these three months. The number of deaths during some weeks was very large; as many as 45 have been recorded in one week. Dr. Robertson, M.O.H., considers that the present method of reporting cases is, from the point of view of prevention, probably as satisfactory as compulsory notification. Both forms of notification are insufficient, as they do not let the health department know of the existence of every case in its earliest stage, when effective advice could in a great many instances be given. There is evidence that the incidence of the disease and the liability to attack was not so great in infants' schools which were well ventilated as in those where teachers and scholars were accustomed to a close atmosphere. Some time ago the Education Committee instructed the teachers in four of the large infants' departments to issue notices to the parents of all the children in any class in which a case of measles had occurred. This notice indicated the symptoms to be looked out for, and recommended that the affected child should be kept in a warm room. This scheme worked so smoothly that the Education Committee has recently adopted it generally in all the infants' departments. Dr. Robertson has pointed out in a recent report that the lessening of the mortality from measles is mainly to be expected from the attention given by the health visitors and others to the instruction of parents in the methods of warding off dangerous complications. While it might be possible to delay epidemics to some extent, yet the infection of measles is so extremely diffusible—since one child will infect a larger number of susceptible children than in any of the other infectious diseases—that epidemics must, he thinks, of necessity occur. The mortality of the disease can better be reduced by means of the warning notices than by attempts to delay the epidemics.

WALES.

A MEDICAL BLACK LIST.

THE account given in the *Western Mail* of a letter read at the meeting of the Cardiff Board of Guardians last Saturday, from the Poor Law medical officer for the Penarth and Dinas Powis district, and of certain interviews with local medical men practising in Penarth, throws a curious light on the economic position of the district, which lies on the south side of Cardiff Bay, and is practically a suburb of Cardiff. Dr. T. F. Roche, Poor Law medical officer, in his letter to the board of guardians complained of the considerable increase in the number of poor persons now applying to him for parochial medical attendance; he attributed this to a system adopted by the combined junior medical profession at Penarth of jointly "black listing" their debtors and boycotting them. He alleged that there were 600 to 700 poor families already on the list, and that they could not get a visit from a local doctor without first producing a fee of 3s. 6d., on the understanding that if on the first visit the case proved to be likely to overtax the patient's capabilities of finding ready money, the fee was to be handed back and the case declined. Dr. Roche added that if he also refused, the only course open to them was to apply to the relieving officer or overseer of the poor for a medical relief order. Rather than undertake the obligations which an official order entailed, and the burden of reporting on all these cases weekly, he had been giving them the attendance they required without the intervention of the relieving officer. From the statements made to our contemporary by local medical men interviewed in Penarth, it is a mistake to say that it was only the junior members of the profession who were concerned in the matter, for all the doctors in Penarth, with one exception, had come to an arrangement about fifteen months ago under which each was supplied with a list of the names of people who had contracted debts and failed to discharge them after a period of over twelve months. This action was not directed against the poor of the town, and all the doctors in Penarth attended poor people, knowing that they could not pay, and not expecting them to pay. The action was really directed against people who could afford to pay for medical attendance—people who drew good salaries and owned the house they lived in. There were about 600 names on the list, the majority being those of people owing money to as many as three or four medical men; a name was only put on the list when twelve months had elapsed from the time of sending the account.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

EDINBURGH SCHOOL BOARD ELECTION.

ON April 2nd the citizens of Edinburgh have to elect twenty-one members to serve on the new board. Dr. James Smith, of Brunton Place, Edinburgh, is one of the candidates. Under Section 4 of the new Education (Scotland) Act power is given to the board to "supply medical officers or nurses, and to provide appliances or other requisites" to carry out the medical examination and supervision of the pupils. It is very desirable, therefore, that there should be one or more members of the medical profession on the new board. Other sections of the community look after their interests in getting representatives elected, but the medical profession is generally rather apathetic. It is hoped, however, it will rally round Dr. Smith.

LOCAL GOVERNMENT BOARD FOR SCOTLAND.

Mr. J. Patten MacDougall, C.B., is about to retire from the Vice-Presidentship of the Local Government Board for Scotland, and the position has been offered to Sir George McRae, M.P. for South Edinburgh, who it is stated, has informally intimated his acceptance. The salary is £1,370. Sir George McRae is a member of a firm of hatters in Edinburgh, and he was at one time the highly successful treasurer of the city. A few weeks ago it was rumoured that Sir George McRae had been offered an appointment in connexion with the Scottish Prisons Board, at a salary of £1,100, but that statement was officially denied. Sir George McRae's appointment will necessitate a by-election in South Edinburgh, where he had a majority of 4,174 at the last general election.

EDINBURGH ROYAL INFIRMARY RESIDENTS' CLUB.

A meeting of this club was held in the large clinical surgery theatre of the Royal Infirmary on March 23rd, Dr. Alexander James in the chair. The president referred to the death of Professor D. J. Hamilton, who was the president of the club for the current year. Dr. Byrom Bramwell was nominated by the committee and elected by the club as president for the remainder of the term, and he will preside at the annual dinner in June. The constitution of the club was altered. According to the new constitution, each resident physician or surgeon on being appointed by the managers of the infirmary becomes *ipso facto* a member of the club, to the funds of which he is invited to pay an entry fee of 5s. The treasurer, Dr. W. Macrae Taylor, submitted proofs of the new edition of the list of members, and requested all present to notify to him any change of address of any member of which they might be cognizant.

Ireland.

[From Our Special Correspondents.]

The Cripples' Institute, Belfast.

The annual meeting of the Incorporated Cripples' Institute, People's Palace, and Bangor Homes of Rest, was held in the Institute, Belfast, on March 24th. The chair was taken by the Lord Mayor. Mr. Norman Barnett presented the surgical report on the institute, and drew attention to the fact that nearly all the cases were due to tubercle; considerable improvement followed the prolonged care rendered possible by the institution which would not have been received at the patients' own homes. Dr. Gorman presented the medical and surgical report of the Homes in Bangor, where 40 children were in residence at the beginning of the year and 80 had been since admitted, many of whom required medical or surgical treatment.

National Service League.

The importance of the principles of the National Service League, more especially in their influence upon the physical health of town populations, has been fully recognized by the medical profession in Dublin. A branch of the league has been established, consisting of 270 members, of whom 36 are medical men. At the annual meeting held recently the Presidents of the Royal College of Physicians and the Royal College of Surgeons both spoke in favour of the league's principles. The president of the Dublin branch is the Earl of Meath, K.P., and the honorary secretary is Dr. John B. Story, 6, Merrion Square, Dublin, from whom further information can be obtained.

Correspondence.

HUNGER PAIN AND DUODENAL ULCER.

Sir,—Mr. Moynihan's letter obliges me to trouble you again. He takes up the position that because he has performed gastro-jejunostomy for so many cases in which he had diagnosed duodenal ulcer, therefore the duodenal ulcers must have been there. What is the proof of this? All my surgical colleagues tell me that it is not possible to know in many cases whether there is a duodenal ulcer or not. This point ought to be cleared up. Mr. Moynihan tells us he operates with no other ground but the history of the case, and he contends that that is sufficient, and appeals to his operations as proof of the correctness of his diagnosis. I want to challenge the validity of this appeal and to affirm that a surgeon who performs a gastro-jejunostomy for a supposed case of duodenal ulcer is not, in a large proportion of cases, in a position to say whether there is a duodenal ulcer or not.—I am, etc.,

Birmingham, March 29th. Robert Saundby.

P.S.—It has been pointed out to me that six hours, the interval of time after the test meals given in my letter last week, is shorter than in my previously published writings. Up till a short time ago I allowed eight hours, and it would be better for experimenters to stick to this for the present, as it is with that period that I can claim a lengthened experience, but I have lately used six hours, and have not, so far, been misled by it. It is clear that the shorter the interval the stronger the evidence of the absence of obstruction.

Sir,—I have read with the greatest interest Mr. Moynihan's letter in the Journal of March 27th. I think it right to add the evidence obtained in my more limited experience to that given by him. During the past eighteen months I have operated on 50 cases of duodenal ulcer (perforative or non-perforative) in which the diagnosis of the locality of the ulcer, based mainly on the presence of this symptom, either by myself or by the physician who submitted the case to me for operation, was absolutely confirmed at the time of operation. As stated by Mr. Moynihan, there was not the slightest difficulty in recognizing and demonstrating the presence of an ulcer or its results. The condition which in my experience is most likely to simulate this symptom is one of cholelithiasis, in which the gall stones are limited to the gall bladder, and are small, multiple, and smooth.

In such cases I have found that the contractions of the gall bladder associated with the demand for a supply of bile when the food enters the duodenum, may give rise to a type of pain very like the so-called hunger pain. It is, however, neither so persistent nor so regular in its recurrence after each meal, and is very frequently associated with nausea or vomiting, which are generally absent in duodenal ulcer.

The suggestion that the cases under consideration should be submitted to a surgeon for "exploratory operation" is repugnant to every operating surgeon. The operation is not for diagnostic purposes but for the treatment of a pathological condition which can be recognized with great accuracy by the expert physician.—I am, etc.,

Belfast, March 27th. A. B. Mitchell, F.R.C.S.Ire.

Sir,—After reading the recent correspondence on the diagnostic value of "hunger pain," I find it difficult to accept Dr. Hutchison's theories in face of Mr. Moynihan's operative experience in over 230 cases of duodenal ulcer. Mr. Moynihan states that his operations reveal that he is mistaken in less than 5 per cent. of the cases, in which he has diagnosed a duodenal ulcer on account of the occurrence of the symptoms, including hunger pain, which are generally regarded as due to a functional condition called "acid dyspepsia" or "hyperchlorhydria." He appears therefore to have proved that this disease, which has been diagnosed for years as acid dyspepsia or hyperchlorhydria, is really duodenal ulcer. But every hospital physician who sees out-patients, and every general practitioner knows how common this condition is. He also knows how amenable it is to treatment, how the symptoms can be instantaneously relieved and in time be caused to disappear completely.

Between 1826 and 1892 *post-mortem* examinations were made on 17,652 cases at Guy's Hospital; in 62 of these an unhealed duodenal ulcer was discovered, but in only 20 was it the direct cause of death by perforation, haemorrhage, or stenosis of the bowel or common bile duct. The presence of an ulcer can be recognized with more certainty by a thorough examination of the inside of the duodenum after death than by examination of its outside at an operation, so that our records of the pathology of the dead are probably even more reliable than Mr. Moynihan's observations on the "pathology of the living."

We can thus draw the following conclusions from clinical experience, *post-mortem* records, and the observations of Mr. Moynihan, the Mayos and other surgeons: (1) Duodenal ulcer is an exceedingly common condition; (2) it is easily cured by medical treatment and is fatal in an extremely small proportion of cases, as in less than ten years Mr. Moynihan has proved the existence by operation of nearly four times as many cases of duodenal ulcer as were found unhealed in 17,652 consecutive autopsies, and more than eleven times the number which proved fatal in sixty-six years at one of the largest hospitals in the kingdom.

It is thus obvious that the proper treatment of duodenal ulcer is medical and not surgical. Mr. Moynihan should rest content with having taught us a most valuable lesson in the symptomology and prognosis of duodenal ulcer, and should cease to perform what his own work has clearly demonstrated to be an unjustifiable operation in the vast majority of cases. If, however, he decides to continue his researches on "the pathology of the living," I should be most grateful to him if he would give me an opportunity, such as he has offered to Dr. Hutchison, of personally observing some of his cases, and of seeing on what evidence he bases his diagnosis of duodenal ulcer at the operation as well as before it.—I am, etc.,

London, W., March 28th. Arthur F. Hertz.

THE TREATMENT OF SCHOOL CHILDREN.

Sir,—I should like to add my word of warning to that of Dr. Lyster published in the British Medical Journal of March 27th, p. 817, as to the urgent need of common action on the question of treatment as a consequence of medical inspection.

It is quite clear that many education authorities are blindly feeling it the obvious way, and the simplest thing in the world, to make an arrangement with the existing

hospitals to render services in return for a subscription. What is, perhaps, more surprising is that hospital managers are tumbling headlong into the same morass. Neither body seems to see that municipalization lies that way. And yet a moment's reflection will make it clear.

If once hospitals accept subsidies from the rates voluntary subscriptions will cease; wealthy people will not pay both ways. When once it is clear that children whose parents can well pay are being sent to the hospital under the "recommends" of the education authority, the medical staff will resent it. Thus the hospitals are between the devil and the deep sea. No one who knows anything about hospitals will dispute the statement that only a slight turn of the screw is necessary to make every hospital in the kingdom insolvent. At first the evil day will be staved off by larger and larger subsidies, but municipalization is the inevitable end. This may be good or it may be bad, but it ought to be clearly foreseen.—I am, etc.,

Stafford, March 29th. JOHN PRIESTLEY.

RATIONAL DRESS FOR THE SOLDIER.

SIR,—With reference to the leading article in the JOURNAL of March 13th on the "Marching Soldier," may I point out that about ten years ago, in an article on "Rational Dress for the Soldier" published in the *Indian Medical Gazette* of November, 1899, I advocated "a coat that could at all times be worn loose and open."

I had for some years observed that a great amount of suffering, disablement, and disease (especially heat apoplexy) were caused by the dress of the soldier in India, and I advocated that the common-sense style of dress adopted by the civilian workman should be used by the soldier, but I looked in vain for any recognition of my observations, or any approbation of my recommendations from the official world, from which I should have expected them.

The dress was warm and nearly waterproof, buttoned up and strapped down by belts and putties. It gave rise to overheating and exhaustion. My chief recommendations were that no putties should be worn, and no belts *over* the coat. I also advocated a shirt cooler than the present woollen one. I desired that the dress of the soldier on duty should be assimilated to that worn by officers and civilians when engaged in severe exercise, such as hunting or shooting. The present dress seemed to me unscientific, cruel, and wasteful of the men's energy.

I shall be glad to send my essays to any one interested in this important question. My remarks apply chiefly to hot climates.—I am, etc.,

Kingstown, co. Dublin, March 21st. C. J. MCCARTIE, Lieut.-Col., I.M.S.

DISINFECTION BY STEAM.

SIR,—In the note on Disinfection by Steam, published in the JOURNAL of March 20th, 1909, p. 741, some references are made to an article which I have recently published on The Essentials of Disinfection and Sterilization by Steam (*Medical Chronicle*, December, 1908).

To shorten statements which I had tried to condense to the utmost, some sentences have necessarily been omitted by the writer of the note, and these omissions alter very considerably the meaning of my text. I would therefore be much obliged to you if you would reproduce verbatim the passage regarding which I think misunderstandings are likely to arise. I do not think that I could discuss here the facts and experiments upon which the conclusions are based; these, however, will be found explained in my paper.—I am, etc.,

SHERIDAN DELÉPINE.

Public Health Laboratory, Manchester, Mar. 22nd.

Practical Disinfection and Sterilization.

From the data given in the preceding paragraphs it is possible to deduce the conditions which have to be fulfilled in order to ensure the disinfection or sterilization of infected articles.

In discussing these points reference will be made to *current steam disinfectors only*. When confined steam is used, arrangements must be made for the expulsion of air by special means, and time must be allowed for the working of various devices. It would be inconvenient to introduce details of this kind in a general statement.

1. *The time necessary to heat and fill the disinfector* with dry steam at the desired temperature depends on the method of heating and on the size and weight of the disinfector. On the supposition that *the disinfector and its contents are cold at the beginning* and that the weight of the load is about 100 lb., the time required to fill the disinfecting chamber with steam (steam free from air) at 100° C. will vary (according to the machine used) between 20 minutes and 1½ to 2 hours. Disinfectors of usual size would require at least 30 minutes.

2. *For the penetration of current saturated steam free from air through 8 to 10 inches of mattress* or blanket, 10 to 15 minutes should be allowed; this time may be reduced when current steam under a pressure of 10 to 20 lb. is used, provided always that some space is left between the articles.

3. *With current steam at ordinary atmospheric pressure*, 5 to 15 minutes' exposure is required to disinfect products containing pathogenic bacteria of a resistance *not exceeding that of the spores of the Bacillus anthracis* (the variations in the time are due to variations in the amount and kind of associated material), but if it is desired to secure complete sterilization of products containing *resistant spores of earth bacilli*, at least 2½ hours' exposure should be allowed, and sometimes more than eight hours would be required.

The time necessary for ordinary disinfection and for complete sterilization respectively would therefore be as follows:

A. Operations with Current Saturated Steam at 100° C.

	Time[1] taken for Disinfection. Minutes.	Sterilization. Minutes.
For heating and filling disinfector with steam at 100° C.	30 to 90	30 to 90
For penetration of bulky articles such as large mattresses	10 to 15	10 to 15
For actual disinfection	5 to 15	150 to 480
Total time required from the beginning to the end of the operations, the disinfector being cold at the beginning	45 to 120	190 to 585

Therefore the time necessary for ordinary disinfection by *current saturated steam at atmospheric pressure* would vary from ¾ to 2 hours, and for sterilization from 3 hours to over 9 hours.

B. With current steam at 10 lb. pressure (115° C.) the time necessary for ordinary disinfection would be reduced by a few minutes only, but complete sterilization would be effected much more rapidly than with steam at 100° C. The earth bacilli spores would be killed in from 15 minutes to 30 minutes by steam at 115° C., so that the duration of the whole process of sterilization would take from 55 minutes to 145 minutes (or by deducting the preliminary period of heating 25 minutes to 55 minutes).

C. With current steam at 20 lb. pressure (126° C.) the time necessary to obtain complete sterilization would be from 45 minutes to 130 minutes (or by deducting the preliminary heating period 15 minutes to 40 minutes).

BEER AND THE MATERIALS USED IN ITS PRODUCTION.

SIR,—Our attention has been called to an article in the BRITISH MEDICAL JOURNAL of March 13th entitled "Beer and the Materials used in its Production." With that portion of the article which has reference to the practice and science of brewing we are not now concerned, but there are several statements touching on the "purity" and wholesomeness of beer, which are, in our opinion, calculated to mislead your readers, and on these we ask your permission to make the following brief observations:

On reference to the brewing returns for the year ended September 30th, 1908, which is a later one than that referred to by your contributor, it will be seen that 34,953,274 bulk barrels of beer were produced during the year in question, in the brewing of which were used 50,960,923 bushels of malt and 4,196,406 cwt. of grain materials (chiefly unmalted barley, maize, and rice) and sugar. Calculating from these numbers, it will be found that 82 per cent. by weight of the total brewing materials used during the year in question consisted of barley malt. In regard to hops, it may be pointed out that the substitutes employed amounted to only 0.007 per cent., which is obviously an utterly insignificant and negligible quantity. The grain materials used other than barley consisted almost entirely of maize and rice prepared with the utmost skill, and generally of a much higher degree of purity than the same cereals in the condition in

[1] It must be borne in mind that in the above table the times given include the time necessary to heat a cold machine; as a rule, the disinfector is already hot before the articles to be disinfected are put into it. Therefore, in actual practice, the time required for penetration and disinfection is about 15' to 30'. With regard to sterilization, the times given in the above table would, in the great majority of cases, be excessive, the most resisting spores are not often present in articles which have to be disinfected.

which they are used in the kitchen for the preparation of puddings and other dishes. The sugar consisted chiefly of cane sugar, invert sugar (the main constituent of honey), and starch sugar, with a small quantity of caramelized or burnt sugars, used for their special flavouring and colouring properties. These are all absolutely unexceptionable in respect of purity and wholesomeness, and, it may be added, are largely used in the manufacture of confectionery and other food products. With reference to preservatives, we may point out that these are not, and cannot, be used in substitution of any proportion of the hops, but are employed in minute proportions in certain beers for well-defined technical reasons which it is difficult to deal with in a letter such as this, but which we should be pleased to place before your readers in another communication if you will be good enough to afford us that opportunity. In any case they are present in beer in very much smaller quantities than in a large number of "temperance" beverages and other food products which command a large sale, and the wholesomeness of which is never called in question.

Your contributor speaks of the occurrence of arsenic in certain beers some years ago as being the "chief" instance in which deleterious substances have been found widely distributed in beer. As a matter of fact this is, so far as we know, the *only* instance in which anything deleterious has been discovered in beer, and your contributor must surely be aware that the lamentable consequences to which he refers were the result of a serious and unfortunate oversight on the part of a single firm, and that the same consequences might quite well have happened to a number of other industries.

In reference to the statement that all materials used in producing beer ought to be thoroughly examined by persons competent to judge them, we may point out that this is actually done; and we venture to assert that there is no brewing material used in this country at the present moment which has not been carefully examined by some skilled expert, either on behalf of the manufacturer, or of the brewer, or of both. In addition to this, we may point out that the materials used in brewing are subjected to continual supervision by the officers of the Inland Revenue Department and their expert scientific advisers. Brewers are quite as anxious as your contributor appears to be that the beers they brew shall be wholesome and free from any injurious material whatever; and our large experience of the practice, both of the leading and also of a very considerable number of the smaller brewers in this country, justifies us in asserting that no such materials enter into the composition of beer. On those who assert the contrary lies the onus of substantiating their charge.—We are, etc. (for the Institute of Brewing),

ALFRED CHASTON CHAPMAN, F.I.C.,
Honorary Secretary to the Society of Public Analysts and other Analytical Chemists.
E. R. MORITZ, Ph.D., F.I.C.,
Scientific Adviser to the Brewers' Society.
ALFRED GORDON SALAMON, A.R.S.M., F.I.C.,
Past President of the Institute of Brewing.
JULIAN L. BAKER, F.I.C.,
Secretary of the Institute of Brewing.

The Institute of Brewing, Brewers' Hall, E.C., March 29th.

*** The figures quoted above from the latest official brewing returns, which had not appeared when the article in question was written, show that malt formed a larger percentage of the brewing materials used in the year 1907–8 than in 1906–7. We may point out that there was no reference in the article to the presence or absence of preservatives in "temperance" beverages, which cannot affect the fact of the addition of such substances to beer. It will hardly be maintained that the use of glucose containing a deleterious proportion of arsenic afforded evidence that all materials used in brewing were "thoroughly examined by persons competent to judge them" in 1900; no doubt greater stringency prevails at the present time, and, in insisting on the importance of such examination, negligence was not in any way imputed to those on whose behalf our present correspondents have written.

MEATY WINES.

SIR,—In your article on "Meaty Wines" you draw attention to what in my judgement is becoming a grave social danger. The specious and ingenious advertisement of alcoholics under the guise of harmless medicaments is introducing drinking habits into numberless households. Hardly a day passes in which I am not asked my opinion of some drugged or otherwise sophisticated wine; and this occurs to an alarming extent in families hitherto practising total abstinence.

The utter absurdity of the claims made on behalf of these nostrums is of course known to every medical man; but to the public at large the "damnable iteration" of their therapeutic merits in every newspaper and on every hoarding is dangerously seductive, and calls for authoritative condemnation on the part of the medical profession.—I am, etc.,

Brockley, S.E., March 29th. J. S. BOOTHROYD.

THE COLD BATH TREATMENT OF TYPHOID.

SIR,—Being solely responsible for the Brisbane typhoid statistics referred to by Dr. G. Parker (p. 754), may I be allowed a few remarks on the above subject?

The effect of a single cold bath on the circulatory system is manifest; the pulse becomes small and hard, its rate reduced. We now know that these changes concur with a rise of blood pressure of from 15 to 40 mm. Hg.[1] The effect of a systematic course of cold bathing is hardly less manifest; the progressive softening (loss of vascular tone) and acceleration of the pulse which occurs to some extent in all cases is lessened and deferred. Formerly these circulatory changes were ascribed to progressive febrile degeneration of the cardiac muscle; increased rapidity was regarded as compensatory of diminished force. And a strong *a priori* case was made out against cold bathing in that it threw extra work on the enfeebled organ. This was difficult to answer except by appeal to experience. Now, however, the advocates of Brand's system are in an entirely different position. Recent work (Crile, Romberg, Passler) has shown that "it is the vessels that are paralysed, not the heart that is damaged." Langdon Brown[2]: The increased rapidity of the heart's action is an attempt to maintain the necessary blood pressure in a vascular system which is unduly dilated; and this undue dilatation is checked and deferred by systematic cold bathing.

The view that the progressive circulatory failure of typhoid fever is an index of progressive vasomotor paresis is consistent with—indeed, explains for the first time—many clinical observations in the hydrotherapy of fever. In my monograph[3] I pointed out that the influence of cold bathing on the temperature is inversely correlated with its influence on the pulse. Early in the fever the temperature is resistant, and prolonged bathing in comparatively cold water is essential in order to obtain a satisfactory reduction; in the later stages the body temperature is readily reduced, and baths of short duration, or comparatively high temperature, are all that is required. The reverse is true as regards the pulse. Early in the fever the cutaneous vaso-constriction and reduction in pulse-rate is marked; in the later stages both these responses to refrigeration are modified.

All these observations are easily explained on the view that an increasing vasomotor paresis is the dominant factor in the circulatory failure; and so, too, is the conclusion—arrived at by all who have had much practical experience of cold bathing in typhoid—that body temperatures which are readily reduced by refrigeration are for the most part of bad prognostic significance.—I am, etc.,

London, S.E., March 23rd. FRANCIS HARE.

[1] Janeway, *Clinical Study of Blood Pressure*, p. 218.
[2] *Physiological Principles in Treatment*, p. 291.
[3] *Cold-bath Treatment of Typhoid Fever*. 1898.

THE United States Treasury Department has recently issued a statement giving all the items of expenditure in connexion with the last illness of President McKinley, under the appropriation of £9,000 for this purpose made by Congress on July 1st, 1902. The payments to the physicians, as the records appear on the Treasury ledgers, follow: Dr. M. D. Mann, £2,000; Dr. H. Mynter, £1,200 Dr. C. McBurney, £1,000; Dr. Roswell Park, £1,000; Dr. C. G. Stockton, £300; Dr. E. G. Janeway, £300; Dr. H. G. Matzinger, £150; Drs. W. W. Johnston, E. W. Lee, and H. R. Gaylord, £100 each; Dr. N. W. Wilson, £50; Dr. G. McR. Hall and Dr. E. C. Mann, £40 each.

Universities and Colleges.

UNIVERSITY OF LONDON.

MEETING OF CONVOCATION.

The Royal Commission.

AN extraordinary meeting of Convocation, summoned by the chairman to consider the appointment of a Royal Commission to inquire into the affairs of the University, was held on March 26th, when the Standing Committee was instructed to represent the views and guard the interests of Convocation. The committee was instructed to expedite by all means within its power the proceedings of the commission so as to limit the interruption of the work of the university, and to do its utmost to maintain the present general and dual character of the university, while providing for its development on the lines of the request of the Senate for the appointment of the commission.

UNIVERSITY OF EDINBURGH.

THE following candidates have been approved at the examination indicated:

FIRST M.B., CH.B.—*Physics.*—E. W. Adcock, E. Allan, B. B. Benison, A. B. Brook, R. E. Cameron, L. F. Davin, F. B. Eykyn, E. M. Ferney, G. R. Grant, A. W. Gunn, D. A. R. Haddon, A. Kalisch, J. A. L. Loudoun, J. N. M'Intosh, J. R. Macleod, G. M'Neill, A. C. Mann, S. R. Moll, R. M. Muir, F. K. te W. Naudé, B.A., E. G. C. Price, J. H. Smith, A. M. Stewart, T. B. Truter, O. H. Wild, C. Williams, J. U. Xuereb.

Botany.—W. W. Anderson, E. G. von B. Bergh, N. N. Chatterjee, T. Doe, S. F. Lea, J. G. Marie, K. R. Mehta, R. H. H. Newton, B.A., A. Rutherford, M. A. L. Sayeed, E. A. Seagar.

NUMBER OF MEDICAL STUDENTS.

The numbers of students of medicine in the various years of study entered for the winter session 1908-9 on December 31st, 1908, were as follows:

First Year.	Second Year.	Third Year.	Fourth Year.	Fifth Year.	Total.
198	173	206	210	405	1,192

The following table gives the total number of students matriculated in the past five winter sessions at December 31st of each session:

1904-5	1,166
1905-6	1,185
1906-7	1,203
1907-8	1,189
1908-9	1,192

The number of women students matriculated for the present winter session 1908-9 in medicine is 46, and 18 women students have paid the extra academical fee. The latter are taking their medical course in the Extra-mural School.

UNIVERSITY OF GLASGOW.

THE following candidates have been approved in the subjects indicated:

FIRST M.B., CH.B. (B., Botany; Z., Zoology; P., Physics; C., Chemistry):—J. Angus (Z.), H. S. Banks (Z., C.), J. S. K. Boyd (Z., C.), W. A. Brechin (Z., C.), D. P. Brown (Z., C.), W. Brown (B.), J. L. Brownlie (Z., P., C.), A. G. Buchanan (C.), J. W. Burton (B., Z.), J. Campbell (C.), W. L. Cassels (C.), J. A. Chrystie (Z., P.), J. M. Clark (B., Z.), B. Cohen (Z., C.), W. M. Conley, M.A. (Z., C.), J. Connell (Z., C.), T. M. Crawford (Z., C.), N. Crichlow (Z., C.), L. Crombie (C.), W. Cullen (C.), W. T. Currie (B., P.), W. Donald (B., Z.), W. C. Fleischmann (Z., C.), J. B. Fotheringham (B., P.), W. Fotheringham (P.), J. Fraser (B., Z., C.), L. Glushak (Z., C.), I. Grant (Z., C.), J. L. Gregory (B., Z., P., C.), E. G. S. Hall (Z., C.) J. A. Harper, M.A. (B.), D. C. Hayes (C.), P. Henderson (P.), W. J. Henry (Z., C.), G. Hislop (Z., C.), W. Hornsby (Z., C.), T. C. Houston (C.), W. W. Howells (Z., C.), D. M. Hunter (Z., C.), T. P. Inglis (B., P., C.), W. Y. Jamieson (Z.), J. F. Lang, M.A. (Z., C.), R. A. Lennie (P., C.), A. Lindsay (Z., C.), R. Lyon (C.), D. M'Alpine (C.), J. L. M'Bean (Z., C.), P. A. M'Callum (Z., C.), H. D. M'Crossan (Z.), P. M'Diarmid (Z., C.), J. M'Gbie (Z.) J. MacInnes (Z., C.), D. M'D. M'Intyre (Z.), R. H. M'Killop (Z., P.), J. R. C. Mackintosh (Z., C.), R. M'Lean (Z., C.), N. Macleod (Z., C.), E. S. Macphee (Z., C.), J. H. Magoveny (B., C.), W. E. Maitland (Z., C.), A. P. Martin (B., Z.), T. S. Meighan (B., P.), A. U. Millar (Z., C.), W. Montgomery (B.), K. D. Murchison (B., Z., P., C.), M. Murphy (Z.), T. M. Newton (Z., C.), T. A. O'Brien (Z.), J. L. R. Philip (Z., C.), R. Ray (B., Z., C.), D. W. Reid (B., C.), D. R. E. Roberts (Z., C.), A. L. Robertson (B., Z., P.), F. M. Robertson (Z., C.), J. I. Robertson (B.), S. D. Robertson (P.), D. A. Ross (Z.), A. M'K. Russell (Z., C.), F. Sherar (P.), N. I. Sinclair (C.), J. F. M'G. Sloan (B.), D. Smith (Z., C.), R. Stewart (Z., C.), W. B. Stewart (Z., P., C.), I. D. Suttie (Z., C.), G. Taylor (C.), J. C. T. Teggart (B., P.), C. J. van Lingen (C.), A. M. Walker (B., Z., P.), J. L. Walker (Z., C.), J. C. Watt (Z., C.), M. White (C.), F. J. Whitelaw (Z., C.), J. Whiteside (B., P.), A. M. Young (Z., C.).

Women.—N. M. A. Allan (Z., C.), C. S. T. Anderson (Z., C.), G. G. T. Anderson (Z., C.), M. J. Brown (Z., C.), E. Crawford (Z.), M. O'R. Gallagher (P., C.), J. F. Henderson (C.), M. P. Hislop (Z.), A. R. M'Kail (Z., C.), M. H. M'Killop (P.), S. A. J. Rankine (Z., C.), M. Thompson (Z., C.), J. M. Walker (P., C.), J. A. Woods (P., C.).

SECOND M.B. CH.B. (A., Anatomy; P., Physiology; M., Materia Medica and Therapeutics):—T. Adam, M.A. (A.), M. J. Aitken (P.), J. B. Alexander (P., M.), J. W. Anderson (P., M.), A. J. Archibald (P., M.), C. Averill (A., P.), T. S. Barrie (A., P., M.), W. E. H. Beard (A., P., M.), J. E. Black (A.), V. Borland (P., M.), D. S. Brough (P.), A. H. Brown (A.), J. T. Brown (A., P.), A. D. Buchanan (A., P., M.), C. Cameron, M.A. (A., P., M.), J. Campbell (A., P., M.), G. W. Clark (M.), C. Cochrane, M.A. (P., M.), J. A. J. Conway (M.), R. C. Corbett (P., M.), J. N. Dobbie (P.), P. Drummond (A.), K. Falconer (A., P., M.), J. Findlay, M.A. (P., M.), R. Findlay (M.), T. S. Fleming (A.), H. Forrest (P., M.), D. T. C. Frew (A., P., M.), L. L. Fyfe (P., M.), A. Gardner (A., P., M.), A. Garvie (A., P., M.), J. Gibson (A., P.), W. G. Goudie (A., P., M.), C. W. F. Greenhill (P.), J. R. Grice, M.A. (A., P., M.), C. H. Haddow (A., P., M.), J. S. Hall (A., P., M.), A. S. Hannay (P., M.), J. Hendry, M.A. (A.), J. R. Herbertson (A., P., M.), A. G. Holms (P., M.), J. Johnstone (A., P., M.), W. Johnstone (A., P., M.), A. Kirkhope (A., P.), J. M'C. Lang (A., P., M.), G. S. Livingston (M.), J. M'Cartney (A., P.), N. M'Farlane (P., M.), J. D. Mackinnon (P., M.), W. MacMurray (A., P., M.), W. W. MacNaught (A., P.), S. A. MacPhee (P., M.), J. P. M'Vey (A., P., M.), M. Manson, M.A. (A., P.), F. W. Martin (A.), F. Matheson (A., P., M.), J. Matheson (A., P., M.), J. P. Mathie (M.), S. S. Meighan (A., P.), A. Mitchell (M.), A. Muir (A., M.), A. A. Murison (M.), M. J. Murray (P., M.), H. L. Neil (A., P.), H. Paterson (P., M.), J. E. Paterson (A., P., M.), J. F. Quigley (Rutherglen) (A., P., M.), A. Rae (A., P., M.), H. C. D. Rankin (P.), H. Y. Riddell (P., M.), J. L. Scott (A., M.), W. L. Scott (P., M.), J. Smith (P., M.), J. A. Smith (P., M.), J. F. Smith (A., P., M.), W. Sneddon (P.), M. Sommerville (P., M.), R. A. Steven (M.), L. T. Stewart (P., M.), T. L. G. Stewart (A.), J. N. M. Sutherland (A.), W. R. Taylor (M.), J. A. H. Telfer (A., P., M.), W. Tudhope (P., M.), G. A. Valentine (A., P., M.), J. D. Walker (A., P., M.), A. G. S. Wallace (A., P.), T. Waterhouse (P.), E. C. White (P.), T. Whitelaw (M.), A. S. Wilson (A., P., M.), A. Wilson (M.), D. Wilson (A., P.), H. G. Wilson (P., M.), F. H. Young, M.A. (A., P., M.).

Women.—M. Alexander (M.), A. B. Auchencloss (A., P., M.), M. A. A. Beard (A., M.), L. E. Dodge (M.), I. Inglis (P.), J. W. Jones (A., P., M.), B. Macgregor (A., P.) K. S. Macphail (A., P.), E. B. Orr (A., P.), B. G. Rutherfurd (A., P., M.), C. H. Shearer (P.), I. J. Stark (A.), B. Sutherland, M.A. (P., M.).

THIRD M.B., CH.B. (P., Pathology; M., Medical Jurisprudence and Public Health).—A. C. Anderson (M.), D. Arbuckle (P., M.), C. Auld (P., M.), R. B. Austin (P., M.), J. B. Baird, B.Sc. (P.), J. Broadfoot (P., M.), J. Buchanan (P., M.), J. A. S. Burges (P.), T. S. Campbell (P., M.), W. G. Clark (P., M.), R. H. Deans (P., M.), J. T. Dick (P., M.), D. Downie (M.), R. Drummond (P., M.) J. Dunlop, M.A. (P., M.), W. D. Dunlop (M.), A. S. Findlay (P., M.), T. L. Fraser (M.), N. Gebbie (P., M.), R. Gilchrist (P., M.), P. Giuliani (P., M.), J. Gray (P.), A. W. Gregorson (P., M.), A. C. Haddow (P., M.), J. R. Haldane (P.), A. B. Hamilton (P., M.), W. Hamilton (P.), J. Jack (P., M.), J. Macallan (M.), D. C. Macdonald (P., M.), I. Macdonald (P., M.), M. A. MacDonald (P., M.), W. Macewen (P., M.), A. Macintyre (P., M.), B. M'Kean (P., M.). J. G. Mackenzie (P.), T. J. Mackie (P.), W. M. M'Kie (P., M.), D. Mackinnon (M.), A. B. MacLean (P., M.), W. A. Maclennan (P.), A. T. M'Whirter (P.), A. Millar (P.), C. L. Miller, M.A. (P., M.), R. S. Miller (P.), R. W. Mitchell (P.), J. Mowat (P.), A. R. Muir (P., M.), F. Murchie (P.), J. Paterson (P., M.), T. Paterson (P., M.), R. R. K. Paton (P., M.), J. Penman (P., M.), A. Poole (P., M.), D. W. Ritchie (P., M.), J. I. Russell (P.), J. H. N. F. Savy (P., M.), J. M'A. Scott, M.A. (P., M.), J. M'N. Scott, M.A. (P., M.), A. H. Sinclair (P.), J. D. S. Sinclair (P.), G. R. Spence (P., M.), J. Stewart (P., M.), J. T. W. Stewart (M.), G. I. Strachan (P., M.), A. E. Struthers (P., M.), C. L. Sutherland (P., M.), W. O. Taylor (P.), S. V. Telfer (P., M.), A. G. W. Thomson (M.), J. L. Ure (P.), H. E. Whittingham (P., M.), J. Williamson (Holytown) (P.), G. J. Wilson (P.), H. Yellowlees (P., M.).

Women.—C. Barrowman (M.), H. S. Keer (M.), A. M. M'Michael (P., M.), M. Muir (P.), M. A. Pilliet (P.), F. E. Sexton (P., M.), J. Wallace (P.), M. A. Wylie, M.A. (P.).

The following passed with distinction in one or more subjects:

FIRST M.B., CH.B.—J. S. K. Boyd, F. M. Robertson, D. Smith, W. Montgomery, B. Cohen, W. M. Conley, M.A., N. Crichlow, W. J. Henry, Sarah A. J. Rankine, H. S. Banks.

SECOND M.B., CH.B.—C. Cameron, M.A., W. MacMurray, S. S. Meighan, J. E. Paterson, D. T. C. Frew, J. W. Anderson, J. T. Brown, L. L. Fyfe, A. S. Hannay, F. Matheson, Ellen B. Orr, T. S. Barrie, H. Paterson.

THIRD M.B., CH.B.—T. S. Campbell, A. S. Findlay, M. A. MacDonald, T. J. Mackie, J. M. Scott, M.A., J. L. Ure, H. E. Whittingham, J. T. Dick, J. Dunlop, M.A., W. Macewen.

UNIVERSITY OF ABERDEEN.

THE following candidates have been approved in all parts of the examination indicated:

FIRST M.B., CH.B.—C. Alison, W. F. Beattie, B. L. Davis, Elizabeth M. Edwards, H. T. Finlayson, A. R. Grant, J. Humphrey, J. G. Johnstone, A. C. W. Knox, W. McCombie, W. P. Mulligan, G. Pirie, A. L. Robb, F. K. Robson, F. G. Stuart.

SECOND M.B., CH.B.—J. B. Anderson, A. M. Brown, G. P. Burr, C. C. Chance, R. J. Creighton, A. Duguid, R. M. Easton, J. G. Elder, J. Fettes, J. R. S. Garbutt, W. E. Glover, H. W. Greig, A. J. MacLeod, J. M. Mitchell, E. H. Moore, J. R. Murray, E. A. Pearson, H. J. Rae, P. Reid, J. Ritchie, R. Sinclair, A. Smith, J. W. Stephen, W. S. Thomson, J. T. Watt, C. W. Weir, W. M. Will.

THIRD M.B., CH.B.—R. M. L. Anderson, N. J. Calder, R. M. Chance, D. G. Cheyne, C. Clyne, E. W. H. Cruickshank, T. C. Halley, B. Kellas, D. Miller, R. W. S. Murray, J. J. du Preez, R. Richards, J. D. Robertson, R. Semple, H. E. Shortt, C. F. Simpson, H. E. Smith, W. Smith, D. J. S. Stephen, H. J. Thomson, W. M. Tough, A. U. Webster.

Medico-Legal.

HILLYER v. THE GOVERNORS OF ST. BARTHOLOMEW'S HOSPITAL.

This case, which was heard by Mr. Justice Grantham and a special jury on Friday and Monday last, raised a question as to the liability of the governors of a hospital for negligence.

Mr. J. B. Matthews was for the plaintiff; Mr. McCall, K.C., and Mr. Norman Craig for the defendants.

It appeared that the plaintiff, a medical practitioner, was admitted to St. Bartholomew's Hospital on March 28th, 1907, in order that he might be examined under an anaesthetic. It was alleged in the statement of claim that, for the purpose of the examination, the plaintiff was placed on an operating table in such a position that his arms were allowed to hang over its sides; that his left arm was in contact with a hot-water tin projecting from beneath the table, and the inner part of his right arm was bruised by the operator or some other person pressing against it during the operation; and that the result of these injuries was traumatic neuritis and paralysis of both arms, and he had ever since been unable to exercise his profession as a medical man. It appeared that the examination was undertaken gratuitously, as the result of representations made by the plaintiff that he had come to the end of his resources. The defendants denied the alleged negligence, and pleaded that if they owed any duty to the plaintiff, it was to exercise reasonable care in the selection of the hospital staff, in which duty they had not failed.

After the plaintiff's case had been opened, it was submitted by Mr. McCall, on the part of the defendants, that no action would lie against the defendants being the governors of a charity which was defined by the 22 Geo. III, c. 77. Moreover, it had been held in a very similar case, *Hall* v. *Lees*, 1904, 2 K.B., 602, that the duties of a nursing association were satisfied by the supply of duly qualified nurses, and this association was not liable for their negligence. In the present case it was not even alleged that the defendants had failed in taking due care to provide a qualified staff.

To this Mr. Matthews replied that he alleged that there was an implied promise on the part of the defendants to provide that the operation should be conducted with due care, and that they would provide fit and proper persons to place and maintain the patient in a safe position on the table, and a breach of those promises or warranties.

Mr. Justice Grantham decided that the evidence had better be heard.

Dr. Risien Russell said that when he saw the plaintiff in April, 1907, after his visit to the hospital he was suffering from paralysis of the left arm and partial paralysis of the right arm. It was caused by neuritis. Witness had not heard that plaintiff suffered from malarial fever in West Africa. He never knew of a case in which a burn caused by a hot-water tin resulted in paralysis.

Sir Isambard Owen gave evidence for the plaintiff.

The plaintiff in his evidence said that he went to West Africa in 1904 as medical officer to a mine, and returned in February, 1905. In June, 1906, he had an attack of sciatica but he got better, but in September, 1906, the attack recurred, and he was then treated by Dr. Gardner. In March, 1907, he was examined at the hospital. The day after the operation the warden and the house-surgeon told him that his arms had not been supported whilst he was under the anaesthetic, and they could not account for the burn on the arm, unless it came in contact with a hot bottle or some hot apparatus. The witness admitted that when the sciatica became acute he began to inject morphine, and that he took a certain amount of alcohol when in West Africa.

At the conclusion of the evidence for the plaintiff, counsel for the defendants again submitted there was no case.

Mr. Justice Grantham, in giving judgement, said that it was impossible for him to allow the case to go to the jury. It was involved in doubt as to the facts. When he was 40 years of age the plaintiff went to the West Coast of Africa. When there he took two or three whiskies and sodas a day. That was the worst thing he could have done. It was not much to be wondered at, that on his return he "took it easy." According to the case as it was opened, he was often employed as a locumtenent; but it appeared that he was really employed only a short time. He was then struck down by sciatica. He had a good friend in Dr. Gardner; but he did not tell Dr. Gardner about the morphine, and continued to take alcohol in spite of his advice. The sciatica forced him to go to the hospital. An examination took place. As to the cause of his suffering after the examination his lordship said he did not understand it. It was suggested that it was caused by a hot-water can; but he could not understand what evidence there was on the point. Nor was there anything to account for the alleged pressure on the right arm. He apparently got bad after some weeks; and as to the right arm the predisposition to neuritis made it become worse. It was clear that the plaintiff had suffered very much before going to the hospital. Against whom was the negligence alleged? If there was any negligence it was that of the surgeon; but it was admitted that he could not make the hospital liable as he was not its servant. Now he had been asked to hold the Lord Mayor and Corporation of London liable. It was said that as a matter of policy he should let this case go to the jury, but he thought it would be a fatal policy to the public to allow a case to go to the jury under these circumstances, because, if he did so, everybody who happened to have a grievance against the hospitals would be bringing an action "on spec," and raising all sorts of questions which would be disastrous to those who controlled these institutions.

His lordship accordingly entered judgement for the defendants, with costs.

THE BARTITSU LIGHT CURE.

We learn from a report in the *Daily Telegraph* that the creditors and shareholders met under the winding-up order made against the Bartitsu Light Cure Institute (Limited) on March 23rd. The company was registered in March, 1906, to take over and develop the business of the Bartitsu Light Cure and Electro-Therapeutic Institute, carried on by Mr. E. W. Barton-Wright. The company carried on business in Bedford Row and Albemarle Street, apparently at a loss throughout. The directors attributed the failure to lack of funds consequent upon a judgement for a large sum being recovered against the company by a former medical assistant at the institute. A receiver had been appointed on behalf of the debenture holder, and he was now in possession of the asstes. The liabilities were returned at £3,260, of which £1,691 is expected to rank, against assets £435, after payment of the claim on debentures. The deficiency as regards shareholders is £21,794. The liquidation was left in the hands of the Official Receiver.

RELATIONS OF MEDICAL MEN WITH UNREGISTERED DENTISTS.

We have received a copy of the *Coatbridge Express* for February 17th, 1909, containing an account of an action brought by Bethia C. Dickson against "The Hygienic Institute" of Glasgow and Coatbridge, claiming damages for serious injury alleged to have been caused to her mouth by an operator in the employment of the defenders when extracting her teeth. Mr. Dunn, L.D.S. (Glasgow), gave evidence in support of the pursuer's case, and said the condition present would have to be treated by a surgical operation. Dr. James Monie of Airdrie proved that previous to the extraction the pursuer was in a healthy condition, and he attributed her present weakly state of health to the extraction. The pursuer said she was called on by an agent of the defenders, who told her that for a certain period his firm would give painless extractions free, and she, thinking it a good chance to get her teeth out, gave him her order. She seems to have paid 16s. in all. The operations were repeated on several occasions, but on one that took place in August, 1908, the operator is alleged to have injured the gum and the jawbone. J. L. Dalziel, junior, of 156, Main Street, Coatbridge, said he was in the employment of defenders as an operator. Owing to the difficult nature of the case, Mr. Miley was selected by the head office to operate. He arranged with Dr. Martyn to be present, and, in fact, he was present, and the witness paid him a fee of one guinea. The doctor was present in the next room. Asked why he was not present in the operating room, witness said Dr. Martyn gave no reason, but could easily have been summoned if wanted. Witness was not a dentist, but he operated and administered local anaesthetics; he admitted having administered anaesthetics that were not local, and denied that the doctor was present in order to supervise the administration of anaesthetics. William Miley, the actual operator, said Dr. Martyn was present in an adjoining room, and within call if necessary. May Dalziel, daughter of John Dalziel senior, manager of defenders at Coatbridge, said that Dr. Martyn was there, and she sat with him in the next room during the operation. David Dunbar, operator in the employment of defenders, gave evidence for the defence, but denied having done any extractions for the pursuer in this case. Dr. David Beatson stated that he had examined the pursuer's mouth, and did not see anything to show that there had been anything improper in the extraction of the teeth. The advocate for the defence put in a citation of Dr. Martyn and closed his case. The case was adjourned to March 15th, when the sheriff took the case to avizandum, and on March 19th delivered judgement, as reported in the *Airdrie and Coatbridge Advertiser* of Saturday, March 20th, 1909, to the effect that the defenders were under obligation to supply the ordinary skill and competence of persons practising the dental art, and that they had failed in this obligation, and were liable in damages to the pursuer, and the damages were assessed at £30, with costs.

At the Grimsby County Court on March 9th, a young woman, a draper's assistant, claimed £3 damages against the Hygienic Institute, of Berne House, Beverley Road, Hull, for the careless extraction of two teeth. The plaintiff had arranged to have a number of teeth extracted and replaced by artificial ones for an inclusive charge of £6. The defendant's representative, a Mr. Brown, extracted eleven teeth after injecting some fluid into the gums. Subsequently there was profuse bleeding, and Dr. Jeffs was summoned. He eventually stopped the bleeding by plugging. He stated in his evidence that, in his opinion, the forceps had been too deeply inserted, and had torn the gum. In answer to the legal representative of the defendant, Dr. Jeffs stated that no fault could be found for the way in which nine teeth had been taken out. The bleeding was accounted for by the cavity produced by the extraction of two front teeth. If the teeth were very bad such a cavity might be caused, but, in his opinion, the operation could not be said to have been skilfully performed. It was stated on behalf of the defendant that the man, Brown, had now left his employment. The plaintiff was awarded £3 damages.

The Hygienic Institute is described in *Truth's Cautionary List* (1909) as being one of the businesses carried on by a Jew of Roumanian origin, named Oscar Farkasch, in association with "J. L. Rosensheim and J. J. Sallmeyer," and is said to have a head office in London, and branches at Glasgow, Hull, and Newcastle. In the Grimsby case it was of course proper that the medical man sent for in the emergency should apply suitable treatment to arrest the haemorrhage, but in the Coatbridge case some explanation appears to be required as to the allegation that a Dr. Martyn, a registered medical practitioner, was present in an adjoining room during one of the operations, and was paid a fee for attendance. Although he took no part in the proceedings, such conduct, if proved, might be held to come under the terms of the resolution passed by the General Medical Council on December 1st, 1899: "Any registered medical practitioner who knowingly and wilfully assists a person who is not registered as a dentist in performing any operation in dental surgery either by administering anaesthetics or otherwise, will be liable on proof of the facts to be dealt with by the General Medical Council as having been guilty of infamous conduct in a professional respect." It seems probable that the words "or otherwise" in the above resolution would include such conduct as that alleged against Dr. Martyn.

ALLEGED MALPRAXIS.

AT Bow County Court on March 9th an action was heard, in which the wife of a solicitor at Leyton claimed £250 damages for negligence and careless treatment from a Walthamstow medical man. According to the claim, the medical man treated a fractured femur as merely a dislocated patella, with the result that one of the plaintiff's legs was now 2 in. shorter than the other. After evidence, which showed, among other things, that no malpraxis had been alleged until the medical man threatened to sue for his fees and that the patient had caused her servant to remove nightly part of the bandages applied, Mr. Arthur Bryan, the counsel for the defence, claimed that the evidence could not be taken as proving either negligence or careless treatment. On the contrary, the treatment, both as regards the patella and the femur, had been shown to be what it should have been. The presiding judge took the same view, and the case ended in judgement for the defendant with costs.

MOTOR CAB DRIVERS.

THE death of the driver of a taximetric motor cab, found insensible at the Bank Station of the Central London Railway, was the subject of an inquiry at the City Coroner's Court on March 22nd. A representative of the cab company concerned gave evidence to the effect that applicants for employment as driver were medically examined with a view to eliminating as far as possible all risk to the public through the sudden death or other incapacity of a driver when on duty. The deceased when engaged had been examined in this fashion. The medical evidence furnished showed great enlargement of the heart and vegetations on some of its valves; an opinion was expressed that the man's heart must have been perceptibly diseased when he entered the service. The jury returned a verdict of death from natural causes.

PARTNERSHIP AGREEMENTS.

BIRMINGHAM.—(1) Partnership agreements prove too often unsatisfactory because the terms are not fully understood at the time they are entered upon, and each side should consult a solicitor. It is, above all things, desirable that there should be equitable terms of release, so that if the bond becomes intolerable it can be broken. Two years' purchase is a good price to pay by an assistant who is succeeding to only a third of a partnership, unless he is also to be paid his salary as assistant during the two years. The question, how long he should wait before obtaining a larger share, is not easily answered, as the senior partner may be a comparatively young man, and be unable to agree to his income being reduced, but, on the other hand, there ought to be a prospect of the total income of the practice being increased under the partnership, and the greater share might be made contingent upon the total income reaching a certain figure. (2) Equal annual holidays for each partner is the only equitable arrangement.

DISTRICT COUNCILS.

W. A. E., a candidate for the rural district council, does not hold any appointment under the Local Government Board. He asks whether the fact of accepting fees under the Notification of Infectious Diseases Act would debar him from accepting nomination for the office.

*** The acceptance of such fees is no disqualification for the office of district councillor.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

AFTER-ATTENDANCE OF SUBSTITUTE.

ZERO propounds the following query: A. is called to attend a case of fracture, owing to the usual medical attendant, B., being away from home. A. attended to the case, and on B.'s return offered to hand over the patient to him. B., however, declines, and advises A. to continue in charge of the case. A. does so, and on the completion of his attendance is asked to advise the patient's parent on another matter connected with the patient's health. Is A. by reason of the mode of his introduction to the family debarred from further attendance?

*** In the circumstances of the case A. would do well to consult B., and be guided by his advice.

PRIVATE DISPENSARIES AND CLINICS.

ENQUIRER writes to say that he proposes to open a dispensary for diseases of women at which he would attend on two days a week from 11.30 to 1.30, his object being to give advice and treatment gratis to women unable to pay who suffer from gynaecological complaints, and he asks whether it would be in accordance with medical etiquette if he were to send a letter to this effect to the medical practitioners in the neighbourhood, and further, whether he might enclose with it a copy of his testimonials.

*** If there is any need for a dispensary for diseases of women in the city where "Enquirer" lives he may try to establish it with the aid of the medical profession and other influential citizens, but it must be controlled by a properly constituted committee, and the staff must be elected in th recognized way. The establishment of a private dispensary cannot be approved.

The Services.

ROYAL ARMY MEDICAL CORPS (TERRITORIAL).

LAST YEAR'S TRAINING.

THE Army Council has intimated to general officers commanding that the working of the Territorial Medical Service in last year's training season reflects great credit upon all concerned, for its thoroughness in face of the many difficulties inseparable from the early stages of reorganization. The reports of administrative medical officers have been examined under the heads of the Medical Service with regimental units, camp sanitation, the training of field medical units, and general hospitals; and suggestions are made for future guidance.

MIDLAND DIVISION.

The First Mounted Brigade Field Ambulance, First Field Ambulance, and Second Field Ambulance of the South Midland Division, and First Southern General Hospital held their first church parade on Sunday, March 28th. The units, under the command of Colonel Whitcombe, marched from the R.A.M.C. head quarters at Witton to St. Martin's Church, Birmingham. They then marched to the drill hall in Thorp Street, where General Raite inspected the parade.

FIRST LONDON DIVISION.

With reference to the prize distribution in connexion with the First London Division, R.A.M.C.(T.F.), recorded at page 822 in our issue for March 27th, Lieutenant-Colonel Harper has sent us a communication, from which it is to be gathered that the premises in Calthorpe Street are not, strictly speaking, the head quarters of the Division. The Division has six units, and though four of these have their head quarters in Calthorpe Street, the other two have separate premises for their head quarters. The units of the First London Division having their head quarters in Calthorpe Street are the Third London Field Ambulance, the First London Sanitary Company, and the First and Second London General Hospitals. On the other hand, the First and Second London Field Ambulances have their head quarters in Bunhill Row, E.C., and Shaftesbury Street, E.C., respectively. It is hoped that eventually a new head quarters will be established for the whole of these units together.

Public Health.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Borough of Bacup.—The estimated population of Bacup in 1908 was 24,600. The birth-rate was 21.8, the death-rate 15.2, and the infantile mortality-rate equal to 104 per 1,000 births. We are glad to find that it is the intention of the corporation to push forward the conversion of pail-closets to waterclosets. To encourage this conversion, part of the cost is to be paid by the corporation, and no charge is to be made for water supplied to one watercloset in each house. The medical officer of health (Dr. John Brown) draws attention to the house fly as a cause of diarrhoea, and urges that, with a view to lessening their number, every effort should be made to remove horse manure from the proximity of houses. He suggests that fowls should be kept, "for they eat the flies and the larvae before they develop into flies." The increasing number of exemptions from vaccination which is occurring in Bacup is a distinct menace to the district. In 1902 there were 560 births, and 51 exemption certificates were granted; whereas in 1908, with 537 births, there were 220 exemptions. There are probably at the present time in Bacup between 600 and 700 unvaccinated children under 5 years of age.

Obituary.

PATRICK BLAIKIE SMITH, M.D.,

CONSULTING PHYSICIAN TO THE ROYAL INFIRMARY, ABERDEEN.

It is with much regret that we have to announce the death at San Remo on March 24th of Dr. Blaikie Smith. The immediate cause of death is understood to have been influenza, but his death will occasion no surprise, as Dr. Smith for some years back had been in feeble health, and those of his friends who saw him last summer noticed that he did not look so well as usual; the loss of his only son at San Remo last year was a sad blow to him.

Patrick Blaikie Smith was born in 1849 in Aberdeen, where his father was City Architect. He studied at Aberdeen University, and took the degrees of M.B. and C.M. in 1870, with highest honours, and that of M.D. in 1878. After graduation, he proceeded to London, and was for some time one of the residents at Middlesex Hospital.

He returned to Aberdeen in 1872, and started private practice; in 1873 he was appointed Assistant to the then Professor of Chemistry, Professor Brazier; this post he held for three years, and old students of the university will remember the help he was to them in the practical chemistry class, being a worthy demonstrator to one of the neatest experimenters in chemistry the university has ever had. About this time he was one of the dispensary physicians, which position he held for eight years. His connexion with the Royal Infirmary began by his being appointed Anaesthetist, which post he held until his appointment as Assistant Physician in 1886; in the following year, on the death of Dr. Beveridge, he was raised to the full Physicianship, and was one of the Lecturers on Clinical Medicine. He was an able lecturer; he gave much attention to clinical teaching in the wards, instilling into the students the importance of strict accuracy in the observation of all symptoms. In 1889 Dr. Smith was appointed Examiner in Pathology in Aberdeen University, which post he held for several years. On the death of Professor Smith Shand he was a candidate for the vacant chair. He held, while in Aberdeen, appointments as Physician to various institutions in the city. He was very successful in private practice, and gained the esteem and regard of his many patients by his devotion to his work. A keen volunteer, he held the rank of Surgeon-Major to the 1st Volunteer Battalion Gordon Highlanders, and was one of the first medical officers to take up the teaching of ambulance work to volunteers.

In 1895 Dr. Smith's health broke down, and the cold east winds of his native city during the winter months compelled him to reside in a more congenial climate; this he found in San Remo, where he spent the winters, returning to Nairn for the summer months. In both places he built up a good consulting practice. Among articles contributed by him to the medical journals were papers on Tumours of the Brain, one on the Treatment of Acute Pneumonia by Ice Cradling, published in the Journal in 1895, and on Peripleuritis.

While practising in Aberdeen, Dr. Blaikie Smith was a well-known figure, of spare build, scorning the wearing of an overcoat, even on the coldest day in that "east-windy" city. He got through an enormous amount of work connected with his private practice and public appointments, and was a great favourite with his patients, and it was with much feelings of regret that they received the news that he had to leave them on account of ill-health. With the students he was exceedingly popular, both as an examiner and lecturer; in the former capacity he was, while searching in his methods, exceedingly fair, never worrying the student with unnecessary questions. Methodical and punctual in all things, he tried to inculcate these virtues into his students, in whose welfare he took a keen interest, and by his old students, all over the world, the news of his death will be received with much regret.

Dr. Blaikie Smith is survived by a widow (a sister of Sir Patrick Manson) and two daughters. As already stated, his only son died at San Remo last year.

LIEUTENANT-COLONEL TUOHY, M.D., M.Ch., M.A.O.R.U.I., I.M.S. (Ret.).

Lieutenant-Colonel Tuohy, who died at Brighton, in his 54th year, on February 22nd, was a distinguished officer of the Indian Civil Service, having taken part in the last Afghan campaign, for which he held the medal. He was stationed for a year at Kandahar after its occupation. He held the position of Police and Civil Surgeon for seventeen years under the Government of the North-West Provinces, and was the first Superintendent appointed to the Ramsey Hospital, Naini Tal, the largest hospital for Europeans in Northern India. Here he held the post of Police and Civil Surgeon, which he also filled at Allahabad, Agra, and Saharanpur. At Agra he was Superintendent of the Medical School and the Colvin and Lady Dufferin Hospital, being a member of the North-West Provinces Committee of the Lady Dufferin Fund. On many occasions he received the official thanks of the Government for the manner in which he performed the duties of civil surgeon. Of late years, after his retirement from the service, he followed private practice at Hove, Brighton.

During his service in India he earned for himself a high character for his administrative abilities, to which on several occasions testimony was given by the heads of the Indian Medical Department. His unexpected death occurred after a comparatively brief illness, and has been greatly regretted by all his old colleagues in the service and by a wide circle of friends, for he was a man whose personal character endeared him to all who knew him. He was, in the words of one of the chiefs of the Indian Service, "a thorough gentleman, conscientious, and tactful in his dealings with others."

FREDERICK HALLAM HARDY,

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain Frederick Hallam Hardy, of the Royal Army Medical Corps, died at Aden on March 8th. He was one of three medical officers engaged in investigations on Lake Nyassa with the view of checking the spread of sleeping sickness in Nyassaland. It was found last December that Captain Hardy had become infected with trypanosomiasis, but in what way is not precisely known.

Captain Hardy, a man who long since proved his claim to the esteem of the profession to which he belonged and his value to the country which he served, died on his way home, and his name must be added to the honourable roll of those who, courageously facing obvious dangers, have finally succumbed in the cause of scientific progress and useful human knowledge. Captain Hardy, though he had reached the age of 36, was a comparatively junior member of the Royal Army Medical Corps, for he joined it only when he had already seen plenty of active service in other capacities, and had established a reputation as an energetic and scientific observer.

His general education Captain Hardy received at Shrewsbury, proceeding afterwards to Guy's Hospital. In 1896 he obtained the diplomas of M.R.C.S., L.R.C.P., and some two years later received appointment from the Foreign Office as Surgeon in British Central Africa. Proceeding to his post he was told off almost immediately on arrival to take part in the expedition in Southern Angoniland, and from these operations issued with a medal and a clasp. The following year again saw him engaged in a military capacity in connexion with the operations against Nkamba, which won him a second medal and a second clasp. In 1900 he was gazetted to the Royal Army Medical Corps, and in view of his experience of tropical conditions was appointed to the King's African Rifles, and with this corps took part in the expedition on the West Coast of Africa. On this occasion he again proved himself a valuable officer, and his name was mentioned in dispatches and a clasp added to his medals. By this time he had in four short years taken part in as many as three distinct expeditions in the field against more or less savage tribes, and in conditions infinitely trying to his own health and to those of the men in his charge. This would have been a good record for any man even if spread over the total period of an officer's career, but it did not complete Hardy's work and experiences in this direction. Only a year later he was to be found once more on active service—this time on the East Coast—as one of those engaged in the wearisome, dangerous, and exhausting operations in Somaliland. They did not end for two years, and Hardy, having been present at the action at Judbelli as well as in the field throughout, received two more clasps. When the Colonial Office took over British Central Africa it secured him for service in that locality, and got him seconded from the Royal Army Medical Corps

in 1906. From that date onwards until shortly before his death he was engaged in carrying out scientific researches on the general subject of tropical disease and was doing most excellent work. When the fact of his infection with the organism of sleeping sickness became obvious it was decided that he should be sent home to England for treatment, in charge of Dr. Kinghorne of the Liverpool School of Tropical Medicine. The list of deaths from sleeping sickness among Europeans is at present but a short one, and it is a notable fact that two contributions to it should already have been made by the Royal Army Medical Corps. The first was that of Lieutenant Tulloch, the circumstances of whose death were of a kind closely corresponding to those now recorded. On the other hand, Captain Hardy is probably by no means the first of his family to die in the service of his country, for he comes of a military stock, his father, General Hardy, being an old Mutiny veteran, and four of his brothers holding commissions in the army and navy.

THE death occurred on March 23rd of Dr. CHARLES COATES, of Bath, at the age of 83. He qualified in 1851 and obtained the degree of M.D.Aberd. in 1856. Dr. Coates was a Fellow of the Royal College of Physicians of Edinburgh and of that of London. He settled in Bath soon after obtaining his degree and had resided there ever since, being actively engaged in practice until about ten years ago. He was for many years one of the honorary physicians of the Royal Mineral Water Hospital, and at the time of his death was the second oldest governor of that institution. He had also been physician to the Royal United Hospital, and when he resigned in 1882 he was appointed consulting physician. He rescued the Blue Coat School in Bath from a position of serious difficulty by a timely gift of £1,000, and recently presented a similar sum to the Royal College of Physicians of London to found a prize.

DR. ARTHUR ROBERTS, whose death at Eltham on March 19th is announced, practised for many years in Kensington. He was born in 1838, entered St. George's Hospital at the age of 17, and obtained the diploma of M.R.C.S. in 1859; in 1861 he took the diploma of L.R.C.P.Lond., and in the same year entered into partnership with the late Mr. J. J. Merriman of Kensington, with whom he continued to work for twenty years. Dr. Roberts was Surgeon to the Kensington Dispensary, and earned the gratitude of the patients there by his kindness and skill. He had a house at Ramsgate, where he sought change and relaxation from the heavy calls of a large practice in Kensington. After his retirement he took a house at Eltham, spending his time between that suburb and Ramsgate. Last November he suffered a great bereavement in the death of his wife, and within four months was laid to rest at her side in the churchyard of the parish of St. Lawrence, under the shadow of the old church he loved and in which he was a constant worshipper.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are: Dr. Vittorio Liebmann, Physician to the Civil Lunatic Asylum at Trieste, aged 49; Professor Paulin, President of the German-Chinese Medical School at Shanghai; Dr. Berendt Vedeler, a well-known gynaecologist at Christiania, aged 72; Dr. Karl Seggel, of Munich, an ophthalmologist of considerable reputation; Dr. Prawossud, Lecturer on Ophthalmology in the University of Moscow; Dr. Ugolino Mosso, Professor of Materia Medica and Experimental Pharmacology in the University of Genoa; Dr. D. W. Brower, Professor of Neurology and Psychiatry in the Rush Medical College, Chicago; Dr. Paul Maunoir, one of the leading surgeons of Geneva, and author of numerous contributions to surgical literature, aged 73; Dr. Thaddeus Asbury Reamy, formerly Professor of Gynaecology in the Medical College of Ohio, now the Medical Department of the University of Cincinnati, aged 79; Professor Rudolf von Renvers, Director of the Moabit Municipal Hospital, Berlin; Dr. Ludwig von Thanhoffer, Professor of Descriptive Anatomy in the University of Buda-Pesth, and author of various works on subjects connected with his speciality, aged 64; and Dr. Anton Friedloidsky, formerly assistant to Hyrtl of Vienna, and an intimate friend of that famous anatomist, aged 75.

Letters, Notes, and Answers.

BRITISH MEDICAL ASSOCIATION AND BRITISH MEDICAL JOURNAL.

THE offices of the British Medical Association and of the BRITISH MEDICAL JOURNAL are at 429, Strand, London.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

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CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

AD REM asks for suggestions in the treatment of a woman aged 50, who had been suffering from "noise in the head" for some months, following what appears to have been an attack of influenza of a gastric type. Bromides, cannabis indica, and ichthyol are among the drugs tried hitherto, but without effect.

ANAESTHESIA IN MIDWIFERY.

CHLOROFORM asks as to the safest form of anaesthetic and the best method of application to use in country midwifery practice, when called upon both to give the anaesthetic and to apply forceps, etc., when far removed from medical assistance. Is Junker's apparatus widely used for this class of case?

*** A good way is to crumple up a handkerchief, put it in a tumbler, sprinkle chloroform on it, and bid the patient hold it over her mouth and nose. As soon as her muscles become relaxed the tumbler will fall away.

PEDICULI CAPITIS.

5677 asks respecting the chances of nits in the hair coming to life or otherwise. Parents often say they are "dead" nits. Does the use of, say, white precipitate ointment kill the nits? or only the lice?

*** The chances are that a good many are not dead. To a great extent the idea of parents that the nits are "dead" is a survival of an old belief handed down from Aristotle—namely, that nits are sterile. This notion was exploded by the Dutch naturalist, Leeuwenhoek, the father of bacteriology (1632-1723); but, his crucial experiment notwithstanding, both the people and the medical profession held on to the dictum of Aristotle. Even unto the present day people still hold that some persons "breed lice," as they term it. The use of white precipitate ointment does not destroy the nits, but only the lice. Any sticky oily preparation suffices for the latter purpose, the respiratory tracheae of the insects being in this way obstructed, with asphyxia as a result.

ANSWERS.

5690.—A regimental medical officer (T. Force) who has not transferred to the R.A.M.C. wears the same uniform as the other officers of the regiment, except that he wears the medical belts instead of the regimental.

W. G. J.—The name of Professor Carl Spengler of Davos is associated with the treatment of pulmonary tuberculosis by means of a mixed human and bovine tuberculin. This was described by him, under the title "Ein neues immunisierendes Heilverfahren der Lungenschwindsucht mit perlsucht Tuberculin, in the *Deutche medizinische Wochenschrift*, No. 31, 1904, and No. 31, 1905.

The Destruction of Flies.

JOHANNESBURG.—It is more or less useless attacking flies in their adult stages, for they are no sooner destroyed than others come and take their place. The only effectual measure is to abolish their breeding places, which, in the case of flies that come into houses, are manure heaps or smaller faecal collections. In dealing with towns this must be seen to by the sanitary service, as it is practically useless for one person to take action if others do not. Fumigating, provided the windows of a house are all shut, will of course destroy the flies present at that time. McDougall's or the XL-All fumigators used for destroying insect pests in vineries are efficacious for common flies as well. Of course, servants, children, and animals must all be made to leave the rooms during the fumigation. With proper ventilation next day any smell soon disappears.

Cleaning Dental Plates.

COONOOR writes: With reference to the note on p. 444, of the BRITISH MEDICAL JOURNAL of February 13th, very many years ago I found great difficulty in cleaning my plate, even when using soap, powder, and a hard nailbrush. Accidentally, I found that by using a cleaned boiled rag and a little soap in a basin of water I could clean it perfectly and quickly with the greatest ease. The rag must not be folded up as a sponge, but as a single layer between the plate and fingers. I then found that I could clean my teeth with a wet rag held between the finger and thumb, much better than by using a toothbrush. I am told that natives of India always clean their teeth with the forefinger and then *polish* them with a chewed twig. Also they invariably wash out the mouth and clean the teeth immediately after eating. If European children could be taught to clean their teeth (each time after eating) in this manner, their teeth would soon improve.

Artificial Respiration.

WHEN Professor Schäfer first described his method of performing artificial respiration on persons apparently drowned, he directed that a folded coat should be placed under the lower part of the chest; but in his latest directions—those which formed the appendix to a report made by a special committee of the Royal Society of Medicine in 1908 to the Commissioner of Police—this instruction does not appear. There seems reason to believe that the folded coat was never intended to be regarded as an intrinsic part of the system, and that its object was merely to make it easier to prevent entry of air being obstructed by contact of the patient's mouth with the ground. By the method as now practised, this object is effected by leaving the patient's head flat on the ground, but turned at right angles to the body. It is believed that the use of the coat has been abandoned in order to reduce the system to its simplest and most essential features, and to ensure commencement of the movements by which respiration is induced at the earliest possible moment. To this end it is also directed that no time shall be lost by removing or loosening clothes.

LETTERS, NOTES, ETC.

Another Appeal to Masons.

DR. WILLIAM WILSON (Secretary, St. Luke's Medical Lodge of Instruction, 184, Goldhawk Road, W.) writes: May I once again appeal to medical men, and medical Freemasons in particular, for votes for the Masonic Charities? At the forthcoming elections in April there are two medical candidates for the Royal Masonic Institution for Boys. Votes for either institution are equally valuable, and will be gratefully received and acknowledged by me.

A Correction.

IN an account of the meeting of the Clinical Section of the Royal Society of Medicine on March 12th, note was made of a case of ascites shown as cured by permanent drainage through the femoral ring. The exhibitor of this case was Dr. W. E. Wynter, not A. E. Wynter as previously stated.

A Disclaimer.

DR. J. DULBERG (Manchester) desires to disclaim any responsibility for the circulation of a testimonial to a vacuum cleaner which appears to have been issued in Manchester. He gave the testimonial to the company as a member of the public, and enjoined upon the company's representative that the testimonial should not appear as emanating from a medical man, and particularly directed that no initials should appear after his name. The latter part of the injunction was kept, but the testimonial issued as a circular is headed, "Striking testimonial from a prominent doctor and J.P. of the city of Manchester." Dr. Dulberg is taking steps to ensure that the circular shall be withdrawn until the objectionable words are deleted.

Spiritual Healing.

DR. ARTHUR KING (Fauresmith, O.R.C.) writes: An able and expositive sermon, by an Anglican priest, on Faith or Spiritual Healing, quickened an interest in me, which your last article (January 9th, 1909) on that subject has further reinforced, since the matter was presented at the consulting-room door, instead of at the study. Christian Science (like hypnotism formerly) has become discredited, because whatever spark of truth it possesses has become overlaid and obscured by ignorant clap-trap and fraudulent quackery. Few medical practitioners will be inclined to dispute the power as good or evil agents, within certain limits, of auto-suggestion, faith, external influence, surroundings, spells, etc., on health and on the course of disease. The very real existence of such influence will be mostly admitted as a fact. I shall avoid all pretence at scientific discussion of the subject, involving as it does the complexities of supersensual psychology, and content myself with superficially touching on the practical aspect of the movement as it affects us. The question before us as a profession is as to our attitude toward the proposed partnership or co-operation of medical practice with the Church or allied societies, such as the Church and Medical Union and Society of Emmanuel. We need not consider as to whether it would be to the material interests of its members or the profession corporately, since we owe our first duty to our patients, to which consideration the issue is narrowed. It seems doubtful if the invocation of spiritual aid by or with the medical attendant would—suggesting the idea more of division than addition—strengthen the faith of the patient in his own recuperative powers, or in the material or spiritual forces at work outside of him, and so conceivably rather lessen than enhance the powers of "mental healing," to use the title of Dr. Chandler's book. Divided reponsibility, like the two stools, introduces an element of precariousness into the situation. Should the patient have a happy issue out of affliction, the most vainglorious practitioner would scarcely take all credit to himself, but on the other hand, should the termination not be so favourable, it might lead to bitter recriminations and mutual undervaluation between the parties concerned. The very old story about the sinking ship and the prelate seems à propos, and I may be allowed to repeat it. The prelate asked the captain if all was being done to save the ship, to which the skipper replied that all the pumps were at work and that nothing remained but to "trust in Providence." The prelate merely said: "Has it come to that?" Might not our patients in comparable circumstances take a similar hopeless view of their condition were we as a profession to indulge in more than a nodding acquaintance with this latest propaganda?

DR. DAVID A. ALEXANDER (Clifton, Bristol) writes: Your discussion of recent attempts to establish ministries of healing recalls a passage in the writings of Stokes of common interest to all who have a regard "as well for the body as the soul." In his work, *Diseases of the Heart and Aorta* (1854), he describes in detail (p. 23) a case of what he regarded as pericarditis with pneumatosis; and, upon its protracted convalescence, throws into a footnote this comment:

"There is a circumstance connected with this case worthy of being recorded as illustrative of the influence of the depressing emotions in retarding the processes of cure in disease. After the disappearance of the signs of air, I was in hopes that the patient would be speedily restored to health; but day after day elapsed, and no progress seemed to be made in the organizing process. The rubbing sound remained unchanged, notwithstanding all the means I could devise to bring the case to a successful issue. I observed that the patient was depressed and melancholy, and, on inquiring from his wife whether he had any mental suffering, I was told that he had great fears as to his spiritual state, and was full of doubts on many points of his religious belief. Under these circumstances, I asked a clergyman, distinguished for his talent and eloquence, to visit my patient. This interview was followed by the best results. Next day the rubbing sounds had become softer; the visit was repeated, and on the third day all morbid signs had disappeared. That the process of organization in this case was prevented or delayed by the depressed condition of the patient's mind there can be no doubt. The recovery of the patient was complete."

There are not a few clinical histories in which might be included the factor which Stokes authenticates.

The Causation of Ingrowing Toenail and the Location of Gout.

DR. G. ARBOUR STEPHENS (Swansea) writes: Mr. Edward C. Masser's letter (p. 823) loses some of its interest from the fact that he did not see for himself in what position the South African native places his toes, when he is lying on his side. The question, "Why do not bootless natives suffer from ingrowing toenail?" may be answered by another, namely, "Why does not every lady who wears tight-fitting and pointed boots suffer from toe trouble?" My experience has been that it is people who are nervous or who are in an irritable state of mind that dig their toes into the bed; highly-strung children are also inclined to the same habit.

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